МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
Харківський національний медичний університет

Module 1. Clinical immunology and allergology. Theme 7. IMMUNOLOGY OF ACUTE AND CHRONIC ODONTOGENIC, PAR-ODONTOGENIC AND NEODONTOGENIC INFLAMMATORY PROCESSES OF MAXILLO-FACIAL AREA AND PROPHYLAXIS OF THEIR COMPLICATIONS

Manual for practical lessons students having higher medical education in English majoring in dentistry

Модуль 1. Клінічна імунологія та алергологія. Тема 7. ІМУНОЛОГІЯ ГОСТРИХ ТА ХРОНІЧНИХ ОДОНТОГЕННИХ, ПАРОДОНТОГЕННИХ ТА НЕОДОНТОГЕННИХ ЗАПАЛЬНИХ ПРОЦЕСІВ ЩЕЛЕПНО-ЛИЦЕВОЇ ДІЛЯНКИ ТА ПРОФІЛАКТИКА ЇХ УСКЛАДНЕНЬ

Методичні вказівки до практичних занять студентів медичних вузів з англійською мовою навчання за спеціальністю "Стоматологія"

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Модуль 1. Клінічна імунологія та алергологія. Тема 7. Імунологія гострих та хронічних одонтогенних, пародонтогенних та неодонтогенних запальних процесів щелепно-лицевої ділянки та профілактика їх ускладнень : метод. вказ. до практ. занять студентів мед. вузів з англ. мовою навчання за спеціальністю "Стоматологія" / упор. П. Г. Кравчун, В. Д. Бабаджан, І. І. Соколова, Т. Н. Габісонія. – Харків : ХНМУ, 2015. – 20 с.

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Aim: to continue forming of clinical thinking of future doctor in the aspect of diagnostics and treatment of the immune system disfunctions; to underline importance of responsible attitude toward taking the family history and objective examination of the patient, which give us possibility to set a previous diagnosis, forming of professional responsibility.

Educational aims:

To know: 1. Concept "disfunction of the immune system", "congenital and aquarede immunodeficiencies", "immune insufficiency";

2. Immunological mechanisms of development of odontogenic infections

3. Immunological mechanisms of development of neoodontogenic infections

4. Stomatological patients have basic laboratory tests for the estimation of degree of immunological violations

5. Advances and disadvanches for setting of immunotherapy at odontogenic and neoodontogenic infections.

To be able: 1) to take the immunological history for stomatological patients; 2) to use the purchased knowledge in diagnostics and treatment of disfunctions of the immune system with the displays of acute and chronic inflammatory processes in maxillofacial area and to ground a prognosis;

Take possession of:

1. The methods of diagnostics on the basis of clinical and immunological criteria;

2. General principles of setting of immunotherapy, realization of prophylactic measures.

The preparatory stage. At the beginning of class, the instructor reveals the importance of the subject, defines the main goals and objectives of the lesson, assess the initial level of knowledge by solving tests and oral interviews. Students are given a task to work with patients.

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Tests to check the initial level of knowledge

1. HIV infection is manifested in the oral cavity:

A. candidiasis
B. necrotizing ulcerative gingivitis
C. herpetic stomatitis
D. Kaposi sarcoma
E. periodontitis

2. Receptors for HIV into target cells are

A. CD3 *B. CD4* *C. IgG* *D. CD11*

3. Patient 60 years complains of pain in the right side of the face, headache, fever up to 39^{o}. He sick in 3 days, the disease is associated with hypothermia. Objectively: skin in the right half of the face – inflammatory hyperemia, edema. Isolated small vesicles, erosions with necrotic plaque. Hearth edge acutely delineated in inflammatory hyperemia highly increased temperature. In the blood test – leukocytosis, accelerated ESR. Immunological indexes: increase in granulocytes, IgM, phagocytic index, number, increase the NBT test. What is the most likely pathology?

A. eczema *B. erysipelas* *C. dermatitis* *D. shingles* *E. Lichen planus*

4. The classification of clinical stages of HIV infection is based on:

A. number of CD4 + T lymphocytes
B. number of CD8 + T lymphocytes
C. antibodies to HIV
D. production of interleukins

5. There is hyperplasia of the tonsils, adenoids, lymph nodes in the girl of 15 years. What immunological tests can reliably prove the active form of Epstein-Barr virus infection:

A. Detection of antibodies to antigens of class G EBV in saliva
B. Qualitative PCR method for EBV DNA in saliva
C. Quantitative polymerase chain reaction, DNA in the blood EBV
D. Qualitative PCR method for EBV DNA levels
E. Indirect hemaglutination reaction

6. The primary element in viral lesions of the oral mucosa

A. papule *B. plaque* *C. erosion* *D. bubble* *E. crust*

7. A sign that is not characteristic of herpetic stomatitis

A. The combination of skin and mucosa
B. Mucosal lesion of other organs
C. Putrid breath
D. The rapid disappearance of bubbles
E. Regional lymphadenitis preceding eruptions

8. The diagnosis of herpetic stomatitis use for

A. Electroodontometry
B. Stomatoscopy
C. Immunofluorescence method, PCR
D. Bacteriological examination of blood
E. Biochemical analysis of blood

9. Acute herpetic stomatitis manifests

A. Acute neuralgic pain along the branches of the trigeminal nerve
B. Blisters along nerve trunks
C. Grouped blisters on the mucous membrane of the mouth
D. Eruption of vesicles in the interdigital folds
E. asymptomatic

10. Acute herpetic stomatitis primarily to differentiate

A. Trigeminal neuralgia
B. syphilis
C. Polymorphic exudative erythema
D. Chronic recurrent aphthous stomatitis
E. candidiasis

Correct answers to test questions: 1 – A, B, C, D. **2** – B. **3** – B. **4** – A. **5** – C. **6** – A. **7** – E. **8** – C. **9** – C. **10** – C.

BASIC CONTENT OF THEME

Odontogenic infections (infections of cavity of mouth), depending on anatomic localization, are divided into ***true odontogenic***, related to the defeat of tissues of tooth (caries, pulpit); ***periodontogenic, related to the defeat of periodont*** (periodontitis) ***and gums*** (gingivitis, perycoronoritis), ***surrounding tissues*** (periosteum, bone, soft tissues of face and neck, supramaxillary area, lymph nodes);

Neoodontogenic infections related to the defeat of mucous membranes (stomatites) and inflammation of large salivary glands.

These types of infection can be reason of serious threatening to life complications from the side of cavity of skull, retropharingeal, mediostinal and other localizations, and also disseaminated defeats of valvular vehicle of heart, sepsis which are passed by hematogenic way.

A festering infection of face and neck can be neodontogenic origin and includes foliculitis, furuncles, carbuncles, limphoproliferative diseases, erypsipelatous inflammation, hematogenis osteomielitis of jaws.

Odontogenic infections

- Pulpitis
- Periodontitis
- Periostitis is with ostoemielitis
- Odontogenic supramaxillary sinuitis
- Abscesses, phlegmons of face and neck
- Lymphadentis of face and neck

Infectious diseases remain one of principal reasons of death rate in the world. The most impotent factors which determine development of infectious process is the state of the immune system of human, natural factors of defence and specific immunity. It is known that an antiinfectious immune answer must be well managed and controlled for the achievement of equilibrium between a removal to the pathogen and strengthening of inflammatory process. Absence of such equilibrium can lead to forming of chronic infection and damage of tissues.

Inflammatory processes of maxillofacial area

Alveolitis is inflammation of small hole of tooth, which arises up result from infecting at his moving away, that sometimes consist with traumatic realization of operation.

A pericoronitis (labored dentition) develops as a result of infecting of gingival pocket which hangs over a crown incomplete of dentition, sometimes wrong located teeth.

The phlegmona of submandibular area mostly arises up as a result of laboured dentition of bottom tooth of "wisdom", and also as complication of periostitis, asteomielitis, limphadenitis.

Abscess (phlegmona) of bottom of oral cavity. It arises up as a result of distribution of infection from the teeth of bottom jaw as a periodontitis, osteomielitis, paradontosis.

Abscess of wing jaw area – sickly infiltration under the corner of bottom jaw.

An abscess subperiosteum (festering periostitis) develops as a result of distribution of infection from the apex of chums of teeth at a periodontitis through the layer of bone. A pus is saved under a periosteum near basis of alveolar rame.

The abscess (phlegmon) of chewind parotid region can arise up as a result of distribution of infection from bottom teeth of wisdom or cheek area and parotid salivary hall.

The abscess of standard is caused to the spread of infection from overhead lateral chisels and first overhead small cheek-teeth (premolars), sometimes from the apexes of palatal roots of small cheek-teeth.

The abscess of jaw-tongue groove arises up at a spread of infection from bottom large cheek-teeth (molars).

An abscess of cheek is distribution of festering process at periostitis of overhead or bottom large and small cheek-teeth in the cellulose of cheek area.

The abscess (phlegmon) of tongue develops as a result of his trauma the sharp edges of teeth, off-grade prosthetic appliances, meal; it can be observed at a ulcer stomatitis. A process is superficial and deep.

A quinsy of Ludvig is a gangrenous putrid-necrotizing phlegmon of submandibular or subglossal area, which spreads on the bottom of oral cavity.

Odontogenic jow osteomielitis is a bone brain fever which is accompanied by bringing in the process of all structural parts of bone and soft tissues.

Diseases of mouth cavity

The widespread diseases of cavity of mouth are **gingivitises and parodontitis**. One of basic etiologic factors of their development there is a dental raid – deposit on the surface of teeth from microorganisms, desquameted ephithelial cages, leucocytes and macrophages. Other reason of origin of paradontitis is odontolith – minerelaized raid on the surfaces of teeth and bits and pieces of meal, which remain in an oral cavity after-meal. Thus, protective forces of organism must be directed against bacteria which provoke the origin of dental sedimentations.

Gingivitis is the inflammatory disease ash, which is characterized by hyperemia, edema and bleeding from gums at the minimum injuring. Principal reason of disease is a failure to observe of hygiene of cavity of mouth, a dental name-plate (colonies of microorganisms which are closely related to the surface of tooth) appears as a result. Local factors have a large enough value: the wrong put stopping and prosthetic appliances, breathing through a mouth, bits and pieces of meal, odontolith. Gingivitis often develops at system diseases, diabetes mellitus and other endocrine disorders, for teenagers and pregnant. Without treatment gingivitis often goes across in parodontitis.

Parodontisis is the inflammatory disease of tissues which surround and support teeth. Parodontitis develops under act of the same local and general factors, that and gingivitis. In the late stages mark the fall of teeth.

Violation of equilibrium in System "extraneous agent - immune defence" at a mouth cavity can be rubble by reason of inflammatory of mucosal shell of gums – to gingivitis. When inflammation of spred from the edge of gums on tissues, surround teeth, gingivitis goes across in parodontitis. With development a disease takes place inflamed bone tissues, slacking and loss of tooth. Periodontopathies very common for patients, 15 senior, aproximetly in 50% are reason of loss of teeth are periodontopathies. Near a 50% population in development countries suffer by these diseases.

The basic etiologic factors of parodontitis are: dental raid, bits and pieces of meal, odontolith.

Basic etiologic factors of parodontitis

On the surface of tooth there are different sedimentations authentication of which is extraordinarily important in the light of estimation them etiologic value:

A dental raid is amorphous, granular and magnificent sedimentations on the surfaces of teeth, which appear due to saving of bacteria on a paradontium and directly on dental surface.

"A mature" raid consists of microorganisms, disquered of ephithelial cages, leucocytes and macrophages which are in adherent intercellular space. At first a raid contacts only with an external environment (overrgums raid) and occupied by aerobic bacteria from an oral cavity, then he spreads for dental surface, combines from undergums dental sedimentations and occupied mainly by anaerobic bacteria which feed on foods of disintegration of other bacteria and tissues of paradontium.

Thus, there is connection between supragums by a raid and gingivitis, from one side, and undergums by dental sedimentations and parodontitis – from other. Both types of raids are populated by the bacteria of different lunging (streptococci, spirochets and others), and also funges (actinomycetess).

Other reasons of origin of parodontitis

Bits and pieces of meal quickly yield to the lyses bacterial enzymes. However some are kept longer and can cause the irritation of gums with next inflammation. Odontolith – it a dental raid which appears on the surface of

teeth mineralized. It is mixture of epithelial cages of mucous membrane and mineral substances. An odontolith can grow all life. Distinguish overgums and undergum dental stone, contributory infringement, as well as dental raid, to development of gingivitises and paradontitis.

Thus, protective forces of organism must be directed against the origin of dental sedimentations and form their bacteria.

As specified already, any unbalance in the system "foreign agent – immune defense" in the cavity of mouth can be reason of inflammation of mucous membrane of gums – to gingivitis. When inflammation spreads from a gingival edge on the surrounding teeth tissues, gingivitis goes across in paradontitis. If not to stop this process, then to the extent of development of disease he will result in inflammation of bone tissue, which results decking of tooth and, in an eventual account, can cause his fall.

The study of epidemiology of periodontopathies testifies wide distribution of such pathology: for patients older 15 paradontopathies appear in 50% cases reason of loss of teeth, and close 50% populations of the industrially developed countries in that or other measure suffer this group of diseases.

Both types of raids are populated by the bacteria of different lunging (streptococci, spirochets and others), and also funges (actinomycetess).

Other reasons of origin of paradontitis:

a) **Materia alba** – a plump white deposits on the surface of the teeth. They are a mixture of saliva proteins, lipids, alien and epithelial cells. These deposits provide a stimulating effect is probably due to metabolic products of bacteria found in them that can cause gingivitis.

b) **Food residues.** Remnants of food are quickly lysis of bacterial enzymes. However, some remain longer and can cause gum irritation followed by inflammation.

c) **Plaque** – a mineralized plaque that forms on the surface of teeth. It is a mixture of epithelial cells of the mucous membrane and minerals. Plaque can grow life and is essentially a mineralized plaque. There overrgum and undergum tartar, promoting, like plaque of gingivitis and periodontitis.

Therefore, defenses should be directed against the occurrence of dental plaque and form their bacteria.

Stomatitis

Stomatitis is inflammatory disease of mucous membrane of mouth cavity. Sometimes stomatitis is the display of system disease. Possible reasons of stomatitis are an infection, trauma, allergic and autoimmune disease, avitaminosis, leucosis. The basic symptoms of illness are hyperemia, edema, itch, burning and dryness of mucous membrane of cavity of mouth. Stomatitis can be accompanied by an odor nuisance from a mouth and selection of saliva with the admixtures of blood.

Candidiasis

Candidiasis which is caused by the yeast-like funges of Candida albicans. At this disease of hyperemia of mucous membrane is covered by a white raid. In case of progress of candidiasis mark distribution of process on palate, gums, palate of tonsils, larynx, esophagus. Diseases expose for weak children, patients with an immunodeficienses, in case of long duration application of antibiotics, corticosteroids and antineoplasty preparations.

Pharyngitises and chronic tonsilitis

A problem of the inflammatory diseases of pharynx is in our days in the spotlight of otorhinolaryngologists, that it is caused by wide distribution of this pathology, mainly among children and persons of young, most capable of working age, and also by probability of development of serious complications and chronic diseases cordially – vascular system, kidneys and joints which result in the protracted loss of capacity. More than 80% respiratory diseases are accompanied by the defeat of mucous membrane of pharynx and lympho-esophageal ring.

Pharynx is one of initial departments of respiratory highway and executes important functions vitally. It provides realization of air in lungs and back; airstream, passing through pharynx and contacting with her mucous membrane, continues to be moistened, warmed and clear up from the self-weighted parts.

An enormous value has a lymph adenoid ring of pharynx which enters in the complement of the single immune system of organism and that is her outpost. Lymphatic pharyngeal tissue plays an important role in forming of both regional and general protective reactions of organism.

Large research material is presently accumulated about receptor function of tonsils and them nervously – reflex copulas with internal, in particular with a heart is tonsilocardial reflex, and with the central nervous system - reticular the structure of mesencephalon and hypothalamus guided by vegetative functions. The mucous membrane of pharynx, and especially her back and lateral walls, owns rich sensible innervations. Due to it pathological processes in pharyngeal structures are accompanied by sickly enough for a patient symptoms – pain, feeling of dryness, extraneous body, by discomfort, scratchy.

Such anatomic feature of pharynx has a large clinical value, as a presence in the direct closeness of the spaces filled by magnificent connecting tissue. At different damages and inflammatory diseases of pharynx maybe their infecting, and in future development of such threatening complications, as a festering mediastinitis, sepsis and the massive bleeding threaten to life as a result of erosion of large vessels of neck.

The presence of chronic focies of infection in the cavity of pharynx, in turn, conduces to intensifying of chronic diseases and serious complications from the side of the vitally important systems of organism: rheumatism, pyelonephritis, dermatitis, pathology of pregnancy et cetera.

Much local and general etiologic factors cause inflammatory processes in the pharynx: presence of chronic diseases, contamination of environment and prevalence of smoking.

An important division of "tonsile problem" is establishment of etiopathogenic reasonable testimonies to the different methods of treatment, development of reliable criteria of estimation of efficiency of curative measures. From this point of view large attention is spared to correlation of clinical signs with data of bacteriological and immunological researches. Inflammatory processes in the pharynx can be caused by different microorganisms. Attracts a moment to development of disease practically there always is a decline of immunity, including local.

Thus, the cavity of mouth owns not only general immunity, identically protects all organs and tissues to the organism but also own local immunity playing a main role in protecting from infections.

Specific immunity

Between the microbial a flora of mouth cavity and the protective factors of organism is a permanent equilibrium. However these factors are often exposed to the attack: both as a result of reproduction and speed-up development of microbes (dental sedimentations) and from weakening of factors of general and especially local immune defense, thus both reasons gather quite often, and then a process spontaneously develops in a few stages.

• hyperergetic inflammatory the inflammatory reaction arrives at gums and tissues which surround a tooth (to the paradontium) located in more depth. This reaction negative consequences of formation of immune complexes are the basis of antigen antibody, destruction of healthy cages of T-lymphocytes and neutrophyles and unfavorable influence of complement system. This is in a great deal explain passing of disease to the chronic form.

• Development of infectious process begins from the surface of tissues, from gums, and spreads deep into a paradontium.

• Destruction of the invaded tissues - mucous membranes, submucous and bone – dental teeth ridges – results in irreversible consequences.

From the stated understood higher, how arise up and develop paradontopaties, which in default of therapeutic interference cause complete destruction of paradontium surrounding tooth, and, in future – loss of tooth.

For today treatment is often oriented to elimination of not only high-pathogenic agents but also on total pharmacological sterilization of primary zones of existence of symbiotic bacteria. Ignoring the laws of co-operation macro - and brings microorganisms over not only to appearance of proof forms of causative agents but also to forming of insufficient amount of mechanisms of effective defense.

Such states are one of reasons of development of syndrome of secondary immune insufficiency. Forming of secondary immune insufficiency expose at chronic recurrent infectious diseases, the causative agents of which are bacteria, viruses, mushrooms and other anthropogenic factors (foods of contamination of environment), curative measures (surgical interferences, inefficient setting of medicinal facilities, application of preparations and food ingredients which repress the immune system), have a Considerable influence; chronic stresses

have a certain influence. All these factors explain wide interest in the problem of correction of violations of local and system immunity. Medicinal facilities which have immunotropic activity and in therapeutic doses proceed in the function of the immune system belong to immunomodulate. Among immunomodulates it follows to distinguish bacterial immunologic preparations of local action (imudon, bronchomunal, rebomunal, IPC-19), nazopheron and others.

Viral defeats of mucous vole of mouth cavity (MVMC) are one of the most widespread groups of diseases, especially in childhood. This group is presented in two divisions of modern stomatological classification :

– viral diseases of MVMC (acute and recurrent herpetic stomatitis, herpangina, herpetic warts, vesicular stomatitis);

– changes are on the mucous membrane of cavity of mouth at acute viral and infectious diseases (acute respiratory – viral infections, measles, german measles, windy pox, herpes zoster, infectious mononucleosis, HIV/of AIDS and other).

According to the modern going near systematization of defeats of skin and mucous membranes of viral nature, determine the wide spectrum of causative agents which can stipulate such defeats:

I. **Diseases caused to DNA** containing viruses (thereby the viruses of herpes group):

1. Simple (nucleate) lichen (herpes simplex). A causative agent is a virus of simple herpes 1 and/or 2 as (Herpes of simplex virus types 1, types 2 (HSV 1 and/or 2).

2. Herpetic Caposhi sarcoma of. A causative agent is a herpes virus type 8 (HHV-8).

3. Chickenpox (variacella) - Herpes Zoster. Causative agent – variacella – Zoster virus or herpes virus type 3 (HHV3).

II. Diseases caused to RNA containing viruses:

1. Aphthae mouth disease (aphthae epizooticae). Causative agent – Aphtovirus aphthe.

2. Herpetic quinsy (herpangina). Causative agent - Enterovirus coxachie A.

III. Diseases predefined by other causative agents:

1. Multiform exsudate erythema (erythema exudativum multiforme). Causative agents - Herpesvirus typus 1, Enterovirus of coxachie A, Enterovirus ECHO.

2. Syndrome Jionotti - Krosti

3. Syndrome of Bechceti

4. Illness of cat-like scratches (lymphoreticulosis benigna).

A clinic of herpes - viral defeats changes constantly, including defeats of mucous membrane of cavity of mouth. It is assisted by technogenic situations which result in violation of ecological balance and worsening of the state of health of population, and also inefficient and uncontrolled applications of new generation of antiviral preparations which are one of reasons of forming of resistant stamms of herpes - viruses.

The main clinical sign of herpetic defeat of MVMC is forming of

blisters, and in future destructive (erosive, now and then – ulcerous) elements on the mucous membrane of cavity of mouth and skin. Analysis of results of modern researches in relation to clinical motion herpes – viral defeats and own supervisions proves that for final verification of diagnosis it is not enough to lean only against the clinical signs of disease. Therefore the special actuality is acquired by the problem of laboratory method of confirmation of etiologic role of viral agent and tension of specific immunity.

By the most widespread form herpes - viral defeat of MVMC, lips and skin of perioral area acute and recurrent to the herpes, caused by the viruses of Herpes simplex type 1 and rarer type2.

Herpes virus infection

Epidemiology. A source of infection at ordinary herpes is a sick man and virus carrier. A causative agent is passed with saliva and sexual way, and also during medical manipulations. The primary infecting can happen utero, at delivery and in the first months of life, whereupon there is lifelong virus carrier. Under act of provocative agents it can be palindromes.

By the source of infection at zoster herpes there can be patients with this infection and chickenpox which is marked considerably anymore cantaginosis. Way of transmission – airborne and pin-domestic. A zoster herpes arises up as a secondary infection, mainly for the persons of ripe years, which have partial immunity as a result of previous contact with a virus which happened as early as childhood. Children are ill very rarely.

The most of diseases on both herpeses arises up in a cold season. Immunity- infectious non-sterile.

Clinic. Ordinary herpes. A latent period lasts from 2 to 12 days. The clinical displays of illness at the primary infecting are marked only in 10–15 % persons. The noncommunicative distinguish after motion, widespread and generalize forms. Mostly there is a noncommunicative herpes of skin, rarer – mucous membrane of oral cavity, ophthalmoherpes, genital herpes, herpetic encephalitis, encephalomeningitis, visceral forms, generalize herpes.

At herpes skins arise up the grouped vesicular pouring out on a infiltrates on the skin round a mouth, nose, mucous membranes of lips, rarer – on cheeks, eyelids and auricles, in other places. Itches, heartburn or pain, are preceded appearance of rash in the corresponding area of body. Blisters have transparent content which later becomes cloudy. In 3–4 days they open up, bare shallow erosions. The last take shelter yellow crusts which fall off within a week. Erosions of epitelaized, not abandoning noticeable changes on a skin. For little children the herpes of skin can run across as a heavy eczema with high lethality. At the defeat of mucous membrane of mouth a herpes a acute or recrudescent thrush, which is accompanied by a hypersalivation, bad smell from a mouth and fever, develops.

Epstein–Barr Virus (EBV)

Epstein – Barr a virus is infect to 90 percents of population. Most frequent infecting asymptomatic, but at depression of the immune system the primary hit of virus in an organism can cause displays of infectious mononucleosis. After the primary infecting for immunocompetency persons a virus is in an organism in a latent form. For the immune compromise persons EBV infection can cause development of chronic form of infection. Depression of immune system related to influence of factors of environment, by the focies of chronic infection a virus can be reactivated with next development of EBV – the associated diseases. In obedience to modern looks to these illnesses belong:

1) Bechcet lymphadenoma, nazopharingeal carcinome and B-cell aassociated lymphadenoma.
2) Syndrome of chronic tiredness.
3) Autoimmune disease (pseudorheumatism, lupus, illness of Shegren and dissipated sclerosis).
4) Patients have lymphoproliferative diseases with a transplant.
5) Hair leucoplakies at AIDS.
6) Khojkin and Greivs (maybe) illness.
7) Hypogammaglobulinaemia is purchased.

Together with other carcinogenic factors (genetic, ecological) to EBV plays an important role in etiology of neoplasm diseases.

Today EBV – an infection doctors associate mainly with a diagnosis infectious mononucleosis, symptoms chronically active form of illness does not appear. There are many publications, researches of clinical displays and variants of treatment of acute form of infection, namely infectious mononucleosis.

The modern methods of treatment of active forms of EBV infection include application of medicamental therapy (acyclovir and ganciclovir) at 80% cases. Development of new preparations for a chemotherapy did not facilitate control after herpetic infections. In the publications of the last years reports appeared in relation to researches of unefficiency of application of ganciclovir and aciclovir for treatment of chronically-active forms of EBV infection. It is set that EBV-timidokinaze does not phosphorylate ganciclovir and aciclovir, that is why these preparations are not effective in treatment of this infection.

Nazopharingial carcinoma (NFC) – genetic restrictive tumour the etiologic factor of which is EBV and meets for the habitants of South China, rarely for the representatives of negroid race and on Caucasus. NFC associates with the molecules of histocompatability of HLA – A2. The factors of natural environment play a certain role, namely, use of the salted fish and foods with nitrozamin. NFC meets with frequency 98 on a 100 000 population in endemic districts. EBV is associated with the undifferentiated type of tumour for young patients and with differentiated--for adults sporadically. A tumour is localized on the back wall of pharyngx and have metastases to regional lymphatic nodes. NFC makes debut from the two extraneous increase of tonsils. Primary hearth

shallow and unattainable. NFC can be accompanied by a nazal obstruction, by excretions from to the nose, by the decline of rumor, paralysis of cranial nerves. In default of therapy a disease is closed lethally as a result of development of pharingeal and tracheary obstruction. Determinations of titles of antibodies to ЕВВ help in diagnostics and monitoring of illness. Last researches of shows, that high titles of IgA to VCA can be scrining on the early stages of illness. NFC-difficult tumor for surgical interference as a result of early innidiation in regional lymphatic nodes. A tumor is proof to chemo- and radio-therapy, which are therapy of choice. On reason of late diagnostics the prognosis of survival on a draught 5 folds 20%. In theory, the prophylaxis of tumor would be a vaccination to EBV in early age.

EBV – the associated tumors meet for **patients with AIDS,** among them there are primary lymphadenomas of CNS and lymphadenoma of Bechcet (50% alike with the African type of lymphadenoma and 50% Web-negative). Oral leukoplakies is described in AIDS-positive of patients. The method of DNA-hybridization demonstrates high replicative activity of virus in this case. For little children with AIDS infiltration of lungs Web-infected limphocytes shows up a interstic pneumonitis.

Other impressions of MVMC

Vesicular stomatitis

It is one of widespread forms of infectious defeat of mucous membrane of cavity of mouth, caused by the virus family of Rhabdoviridae.

The latent period of vesicular stomatitis lasts a 1–5 twenty-four hours. A disease begins acutely, from increase temperature, intoxication. In 2–4 days on the mucous membrane of cavity of mouth, red border of lips and skin of face there are vesicular elements pouring out, which quickly transform in erosion. On a background the increase of amount of vesicles and erosions there is an increase of lymphatic knots. Epitalisation of elements takes place during 10–12 put.

Diagnose a disease on the basis of clinical presentation, data of epidemiology anamnesis, urologic and serum methods.

Herpetic quinsy

It diseases too often enough look after stomatology in clinical practice. It is caused to DNA-virus of herpes (HSV1) and PHK-include by viruses - enterovirus of Koksakii A 2–6, 8,10, 22; Koksaki B 3, 4, ECHO 9–11, 16.

The source of infection is a patient or virus carrier. The entrance gate of infection are mucous membranes of epipharynx and intestine Children are mostly ill from three to ten years. There can be sporadic or seasonal flashes (summer-outumn), especially in the organized child's collectives.

A latent period lasts from one to ten days. A disease begins acutely – from a fervescence to 38–40°C, intoxications. An appetite is violated, there are signs of dyspepsia – vomit, diarhea, stomach-ache. On 3–7 day diseases can appear elements of defeat of mucous membrane of cavity of mouth are shallow grouped vesicles with serosal or serosal-hemorragic content, which transform on erosion.

The feature of clinical displays of herpangina is a retrograde type of appearance of elements of pouring out from the distal departments of cavity of mouth – palatal brackets, standard – with possible distribution them on the mucous membrane of tongue and lips. For treatment of vesicular stomatatis and herpangina apply antiviral preparations (groups of interferon), solutions of antiseptics for hygienical treatment of mucous membrane of cavity of mouth, ceratoplastic facilities.

Mycotic stomatitis, or dairymaid (candidiasis)

It a disease most frequent meets in sackling age, foremost, for prematurely born little people. For the children of senior age it meets rarer and mainly after heavy infectious, chronic diseases with application of antibiotics in treatment. Fungus of "Candida albcans", which being in the healthy cavity of mouth, causes a dairymaid. At mionectic immunity, injuring of mucous membrane of cavity of mouth et cetera fungus activates and begins to overgrow.

Differential diagnosis

At ordinary herpes and herpes Zoster taking into account their clinical form it is necessary to exclude a chickenpox, erysipelas, anthrax, enterovirus herpangina, eczema, defeat of eyes and central nervous system of other etiology.

Gangrenous form of herpes zoster distinguished from anthrax allow intense pain and no daughter bubbles around the edges scab and extensive edema.

For an enterovirus herpangina characteristic placing of blisters mainly on palatal brackets, rarer on a soft palate, tongue, tosil. Every bubble is surrounded by a red crown. At herpetic stomatities they are located on a mucous membrane in the area of cheeks, on gums, tongue, more sickly and kept longer.

Diagnostics

Diagnostics of herpes zoster of skin form and ordinary herpes at typical displays is not difficult. Considerable difficulties arise up at generelize herpes, defeat of eyes, central nervous system and others like that. In such cases conduct laboratory researches (virologic, citologycally and serum) which carry out in the conditions of permanent establishment. The most accessible and informing method diagnostic of herpes of mouth cavity is DNA-polimerazing, due to which it is possible to confirm the presence of causative agent in content of blisters or in cages from the surface of erosion. For finding out of character of motion of infectious process – acute herpes or relapse of disease - it follows to define the state of specific immunity to the certain herpes virus (to the title of specific antibodies of classes of Ig G and Ig M in the serum of blood). An exposure of diagnostic title of antibodies or fourfold and greater growth of title in pair serums can be a verification criterion.

Will underline that at the least doubts in relation to the clinical identity of passionately-destructive defeats of MVMC and skins of perioral area with the certain form of herpetic infection it follows to carry out laboratory

verification of all (at least most credible – simple herpes, virus of Ebshtein-Barr and cytomegalovirus of herpes group.

Treatment

Acute herpetic defeat of cavity of mouth foresees setting **of antiviral preparations, pathogenic and symptomatic facilities.** In case of moderate and heavy stages of disease it is expedient to apply preparations with double - antiviral and immunomodulators - by an effect, and also vitamin complexes and restoretive facilities.

General principles of treatment of recurrent herpes of mouth cavity are application of etiotropic preparations in a period intensifying, correction of pathogenic changes, diagnostic and treatment of somatic diseases in a period reconvalescention and further vaccination (adults and teenagers).

Modern conceptions of pathogenesis of infectious diseases with chronic character of motion (and a herpes is a just the same infection), main directions of treatment is elimination of causative agents, immuncorrection, pathogenic and symptomatic therapy.

High-resistivity and rapid adaptation of causative agents to medications, probability of forming of secondary postinfection immunodeficit require a permanent search and introduction in everyday practice of new approaches and methods of therapy of herpetic infection.

Pathogenic therapy of herpetic stomatitis foresees the united use both anti-virus chimiodrugs with a different mechanism actions and immunobiological preparations with the different orientation of their influence on those or other links of pathogenesis of disease.

Taking into account viral etiology, in treatment of recurrent herpetic infection a leading role is played by specific anti-virus preparations, the mechanism of action of which is sent to blocking of reproduction of viruses in a cage, their elimination. Antiherpetic chemotherapy which was formed as an independent area of science less as three decades to the volume was filled up lately by many new specific anti-virus preparations and facilities of immuncorrection.

Among preparations of **local** application most activity in relation to herpes virus is exposed **by anti-virus ointments:** herpevir, zovirax, vitragel, 0,5% bonafton, 0,5% adimal, 0,5% ridoxol, 0,25% ooxaline). Rash lubricare brilliant green. focies on mucous membranes moisten solutions of reaferone, leucocytes interferon, novocaine, and by brier oil. At ophtalmoherpes in a conjunctiva bury solution of reaferoni, idosiridine, treatment is carried out by an oculist. If the bacillosis shown antibacterial therapy..

Anti-virus preparations of new generation, which are able preferentially to repress reproduction of herpesviruss in the infected cage, are lately created. Now most effective chemicaldrugs of the adopted group are synthetic nucleotides (to the purine and metadiazine analogues of nucleozides- aciclovir,

valaciclovir (valtrex), ganciclovir (cimevena), famciclovir (famvir). Preparations are today created on vegetable basis – panavir. High antiherpetic activity is educed and at the analogues of pirogogsphati – fosforacetic acid and foscarnet, and also at new preparation – tromantadin, which operates on the late stage of reproduction, in contempt of recreation of viral glycoproteins.

In the clinic of therapeutic stomatology widely apply preparations of aciklovir, what similar after a structure to intermediate foods of biosynthesis of viral DNA and RNA and able on competition basis to repress the synthesis of virusinduced enzymes and their catalytic activity. Main advantages of these preparations are high selectivity of action (only in the infected cages in which a virus is on the stage of replicative activity) and hypotoxicity. Aciclovir, as a direct competitor of desoxyguanosinethrifosphat (nucleozide, necessity for replication of viral DNA), built in viral DNA and specifically blocks the further height of chain and possibility of virus replication.

During the last years in Ukraine widely apply the home analogue of aciclovir - herpevir, (which is produced in two forms are pills (for 0,2 г) and ointment (0,25%). Our experience of application of herpevir proves him high efficiency. With the acute herpes of cavity of mouth it is appointed children for 0,2 gs of herpevir 2–5 times on a day during the period of high temperature, appearance of elements of defeat and next three days. In case of recurrent herpes of herpevir appoint for 0,2 gs five times on twenty-four hours during 10–14 days. For the increase of antirecurrent effect of curative complex for patients with the heavy form of recurrent herpes, especially on a background an immunodeficit, heavy somatic diseases, HIV/of AIDS and others like that, preparations of group of aciklovir in future apply prolonged – for 0,2 gs on twenty-four hours during months and even years.

In complex therapy and prophylaxis of viral infections next to etiotropic chimiotherapy no less important role belongs to immmunologik drugs which assist normalization of cellular and humoral immunity, and also activate the system of interferon defense.

On the modern stage pathogenic therapy of viral infections foresees three approaches:

- application of facilities of immune- and interferone therapy (are specific (against the herpesvirus of man 1 to the type, 2 to the type, 3 to the type, anticito-megalovirus, against a Epstein-Barr virus) and normal immunoproteins, recombinant gene-engineering interferons (of reaferon, laferon, viferon, virogel);
- application of facilities of stimulation of the system of interferone defence (amixin, lavomax, kagice, poludan, izoprinozin, groprinozin, and others like that);
- application of immunomodulaiting drugs, which assist proceeding in the function of the immune system (immunofane, T-activine, herpetic vaccine, specific immunoproteins).

The special place in treatment of recurrent herpes belongs to **vaccinotherapy.** Vaccinotherapy of chronic herperic infection prolongs a remission, up to the complete freezing of relapses, and more easy flow of disease provides in future.

Herpetic vaccines are divided into living, inactivated (solidvirion and subunites) and recombinant. Wider in all apply a liquid herpetic anavaccine the operating component of which are specific agents of herpesviruss (1 and 2 types). Vaccinotherapy for children 14 to is not carried out.

For local symptomatic treatment of herpes of cavity of mouth use solutions of antiseptics, fermentative drugs.

During the expressed intoxication conduct detoxication therapy. For the removal of pain syndrome at a herpes zoster use analgetics and physical therapy methods (ultrasound, ultraviolet therapy). In a holiatry shown Thiaminum and ciankobalamid, for the removal of vascular disorders – complain, trental, curantil.

The health centre system is carried out at a recrudescent herpes, and also complicated forms. To the patients, which suffer on an often recrudescent herpes above-mentioned the course of polyvaccines is repeated through each by 3–6 misses during 3–5.

A prophylaxis and measures are in a cell. Patients with a herpes zoster it must insulate from children which were not ill a windmill. With the aim of prevention of herpeses it follows to avoid supercooling and overstrain, temper an organism. To prevent a herpes in new-born, it is necessary to avoid carnal knowledge at the end of pregnancy, in good time to treat men and women with a genital infection. Dezinfection in an epidemic cell does not conduct.

Control questions:

1. Immunological anamnesis
2. Immunoassaies (immunogramme)
3. Immune disfunctions, classification
4. Primary immunodeficits
5. Secondary immunodeficits
6. Deseases of MVMC
7. Viral lesions of MVMC
8. Diagnostics of viral diseases of MVMC
9. Treatment of viral diseases of MVMC
10. Epstein-Barr viral infection as common medicine problem.
11. Epidemiology features of Epstein-Barr virus.
12. Role of antibodies of Ig G EBNA, IgG EA-EBV, IgG VCA in diagnostics of different forms of EBV - infection.

Tests for verification final level of knowledge

1. Shingles differentiated by the nature of pain

A. Prosoponeuralgia *D. Polymorphic exudative erythema*
B. syphilis *E. allergic stomatitis*
C. pemphigus

2. Clinical signs that allow to differentiate Herpangina and acute herpetic stomatitis

A. acute onset *D. Localization elements defeat*
B. symptoms of intoxication *E. symptomatic lymphadenitis*
C. elements defeat

3. Family history regarding herpes virus infection, frequent acute "cold" diseases, chronic diseases of the respiratory system, eye viral conjunctivitis or blepharitis, the presence of stimuli of the oral mucosa - risk factors

A. periodontal diseases *D. pemphigus*
B. Recurrent herpetic stomatitis *E. candidiasis*
C. Chronic recurrent aphthous stomatitis

4. Effective action for the prevention of recurrence of herpetic stomatitis finds

A. The use of hormonal drugs
B. Acceptance of antiviral drugs and immunomodulators
C. Antibiotic therapy in combination with vitamin therapy
D. Full course of antiviral therapy
E. Started early physiotherapy

5. What ointments used for the treatment of erosions in the first days of acute herpetic stomatitis ?

A. Zovirax *C. Fastum–gel* *E. Bonaftonovu*
B. Butadionovuyu *D. acyclovir*

6. AIDS-defining levels of CD4 + T lymphocytes is

A. 1000 cells/mm (≈50%) *C. 200-499 cells/mm (14–28%)*
B. ≥500 cells/mm (≥29%) *D. <200 cells/mm (<14%)*

7. Duration period seronegative for HIV infection is

A. 2 weeks *C. up to 6 months*
B. up to 3 months *D. 1 year*

8. Primary viral replication occurs Epstein Barr virus

A. In the epithelium of the intestinal wall
B. In bronchial epithelium
C. In nasopharyngeal epithelium
D. In the epithelium of the salivary glands

9. Herpes virus type 6 affects mainly

A. B-lymphocytes *C. phagocytes*
B. T-lymphocytes *D. Is not immunotropic virus*

10. Specify the correct statement against cytomegalovirus

A. Is not a member of the family of Herpes virus *C. has policytotropic effect*
B. Has no policytotropic effect *D. Amazes salivary glands*

Correct answers to test questions: 1 – A. **2** – D. **3** – B. **4** – B. **5** – C. **6** – D. **7** – C. **8** – C. **9** – B. **10** – C.

Навчальне видання

Модуль 1.
Клінічна імунологія та алергологія.
Тема 7.
ІМУНОЛОГІЯ ГОСТРИХ ТА ХРОНІЧНИХ ОДОНТОГЕННИХ, ПАРОДОНТОГЕННИХ ТА НЕОДОНТОГЕННИХ ЗАПАЛЬНИХ ПРОЦЕСІВ ЩЕЛЕПНО-ЛИЦЕВОЇ ДІЛЯНКИ ТА ПРОФІЛАКТИКА ЇХ УСКЛАДНЕНЬ

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Module 1. Clinical immunology and allergology.
Theme 7.

IMMUNOLOGY OF ACUTE AND CHRONIC ODONTOGENIC, PAR-ODONTOGENIC AND NEODONTOGENIC INFLAMMATORY PROCESSES OF MAXILLO-FACIAL AREA AND PROPHYLAXIS OF THEIR COMPLICATIONS

Manual for practical lessons students having higher medical education in English majoring in dentistry