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Evaluation of Immunohistochemical Markers and Features of their Dynamics in Gum Biopsies in Various Stages of Periodontitis

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Annotasiya: Periodontal disease "Periodontosis" is the gradual destruction of the periodontium that surrounds the tooth and holds it in the tooth cavity (alveoli). The periodontium includes the gingiva, periodontal ligament (connective tissue), alveolar bone, and root cementum. Diagnosis of true periodontal disease is complicated by the addition of periodontitis, an aggressive inflammatory process in periodontal tissues. Despite the similarity of the names, these are different dental pathologies, but they are similar in the manifestation of the consequences of timely treatment. In severe cases, the patient faces complete dysfunction of the teeth with the need to replace them with implants and prostheses.

Key words: Pathology diagnosis, Periodontal disease, Treatment options.

Causes of the disease

The exact, exact causes of periodontal disease are not fully understood. According to recent studies, the state of the immune system plays a key role in the development of the disease.

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Endogenous causes include:

a) weakening of the body's immune defenses and autoimmune diseases (pathological reaction of the immune system to the body's own cells);

b) chronic failure of metabolic processes in diseases of the endocrine system (diabetes mellitus, hypo- and hyperthyroidism, etc.);

c) changes in hormonal status during perinatal and menopause or disruption of hormone production during adolescence and old age;

d) oncopathology;

e) atherosclerotic damage of blood vessels;

f) congenital deformities of the jaw, limiting the load on individual teeth;

g) hereditary predisposition to periodontal pathologies is allowed

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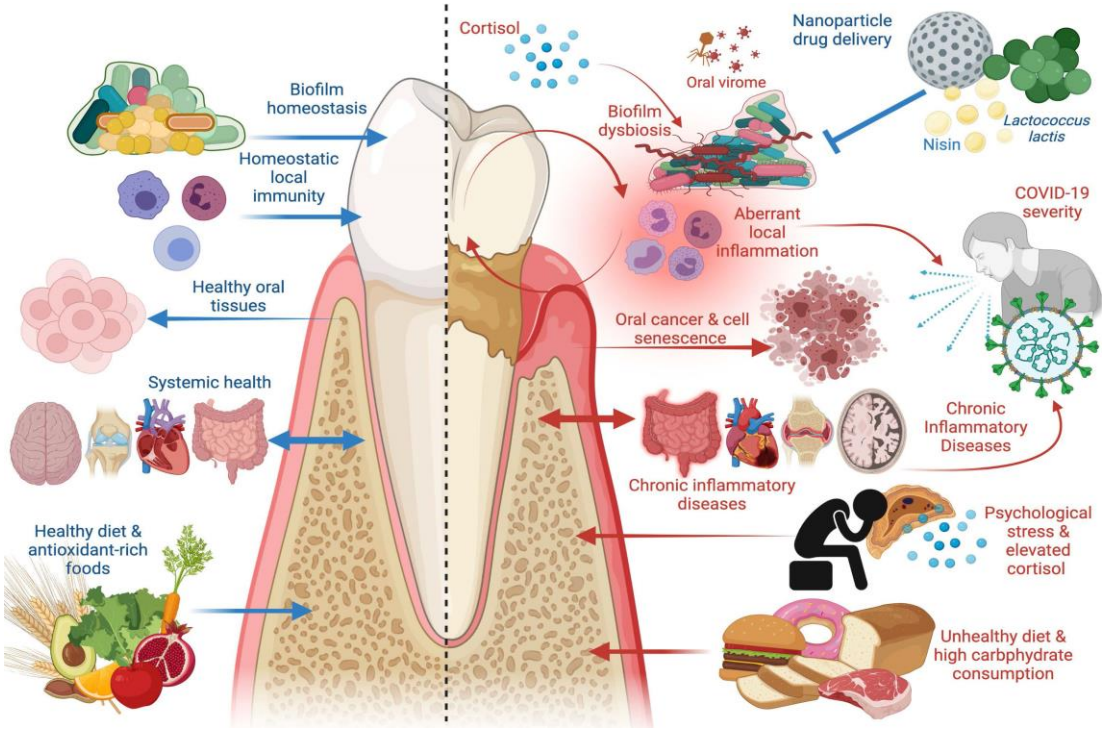


Exogenous factors of periodontal disease in adults:

a) addiction to nicotine and alcohol;

b) lack of vitamin and mineral components in the diet;

c) traumatic origin of the pathology;

d) improperly installed or selected orthodontic structures;

e) self-treatment of periodontitis (elimination of inflammatory symptoms against the background of progressive atrophy of periodontal tissues);

f) the accompanying cause of gastronomic addiction to sweets.

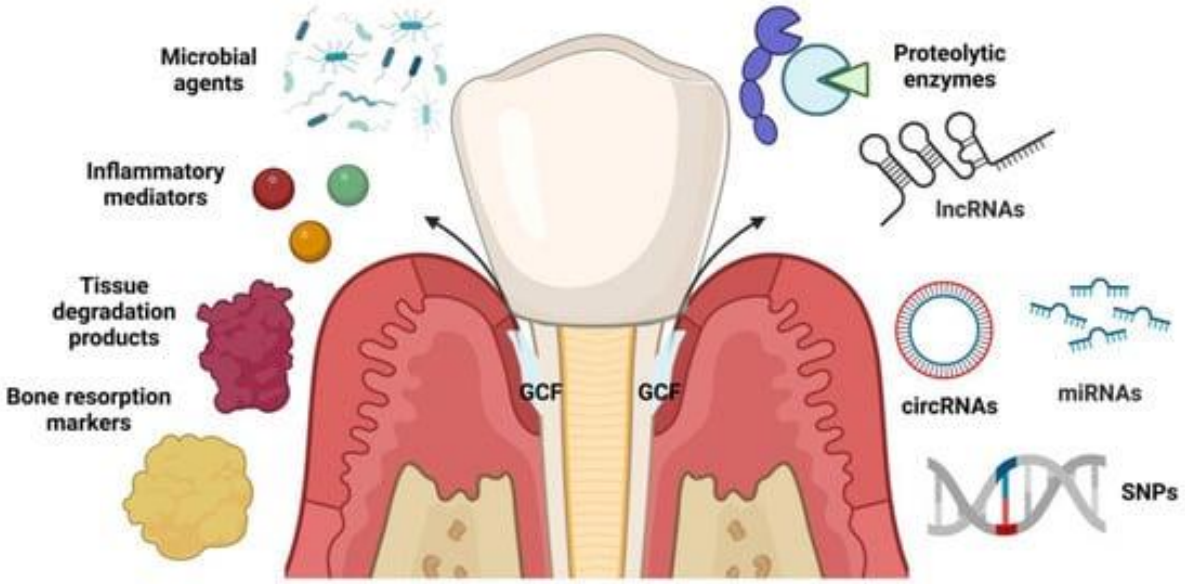
How is periodontal disease manifested?

Symptoms reflect the stage of its development. At the initial stage of periodontal destructive changes, patients note the following:

a) discomfort when chewing food;

b) Painful reaction to very cold / hot food.

c) In most cases, the main symptoms of the disease are detected during professional teeth cleaning in people who are concerned about oral health.



Typical complaints of a patient with periodontal disease appear in the second stage of the disease: Unlike periodontitis, periodontal disease is not caused by inflammation. The trigger for the development of the disease is a violation of the blood supply to the periodontium. As a result of lack of nutrition, the mucous membrane becomes thin, and the gums become pale and droopy. Opening the neck of the tooth leads to the formation of periodontal pockets (separation of the gum from the tooth), destruction of the tooth bed and atrophy of bone tissue. Gradually, the teeth loosen and move from their natural position. Food debris and plaque accumulate in gum pockets. The destructive process continues for years and often leads to the development of diseases of the digestive system.

a) bleeding gums during hygiene procedures;

b) pale pink color of periodontal tissues;

c) itching sensation;

d) the appearance of small spaces between the teeth, in which pieces of food get stuck;

e) pain when eating food with a specific taste (sour, salty, sweet);

f) swelling of the gums after chewing solid foods;

g) The smell of rotten breath.

The intensity of the symptoms increases gradually, which becomes the main reason for delaying the visit to the dentist.

Severe tissue destruction is characterized by:

a) sharp pain during tooth brushing or eating;

b) mobility of individual tooth elements;

c) the presence of periodontal pockets;

d) crooked teeth;

e) visual effect of the tooth (gum).

f) As a result, periodontal atrophy leads to tooth loss.

Diagnosis of pathology

The basis for diagnosis is an examination of the oral cavity, anamnesis and X-ray examination. In addition, a general clinical blood test is prescribed. During the interview with the patient, the doctor determines the following:

a) intensity and duration of manifestations of periodontal discomfort, pain, bleeding, etc.

b) presence of chronic diseases of internal organs;

c) characteristics of eating behavior and bad habits;

d) previous dental interventions, including treatment of periodontitis.

During the examination, the periodontologist (dentist) evaluates the condition of the gums, the condition of the teeth, the level of exposure of the bone tissue and the quality of the enamel.

X-ray stage of the disease

The initial stage of the disease can be determined only with the help of X-rays. The photo of the tooth part shows the following:

decrease in volume, decrease in bone density;

light exposure of the intragingival part of the tooth.

X-ray examination of a patient with progressive periodontal destruction shows the following:

change in the alveolar part (alveolar process);

increased interdental spaces;

affecting up to 50% of teeth.

In the advanced stage of the disease, X-rays show the following:

lack of gum contact between teeth;

bite deformation;

exposed tooth roots;

serious divergence of teeth (in the front - like a fan).

In the severe stage, periodontal disease cannot be stopped conservatively. The patient should contact the clinic for dental surgery and implantology services.

Restoration of teeth

The most difficult stage is prosthetics for severe periodontal disease. Tissue atrophy and tooth maneuvering make it difficult to install bridges and crowns. To restore the thinned alveolar part of the upper or lower jaw before prosthetics, osteoplasty is indicated - increasing bone tissue. Restoration of atrophied areas is carried out using two methods of sinus lifting:

closed sinus lift (through a small perforation in the gum with bone thickness ≥ 5 mm);

raising an open sinus (through a micro-section of the gum with a thickness of ≤ 5 mm).

If there are contraindications to bone grafting and prosthesis installation, the optimal solution to the problem is basal implantation. Its difference from the classic implantation is in the placement of artificial tooth roots in the deep (basal) layer of the bone. This is an innovative alternative with a number of advantages:

installation of implants in one day;

restoration of aesthetics and functionality of chewing teeth;

operation without raising the sinus;

lack of long-term rehabilitation after surgery.

Preliminary preparation is carried out on the day of surgery. A few days after the installation of the basal implants, a prosthesis is placed on them, which provides a natural load.

Treatment options

Destructive periodontal changes are corrected in a dental clinic. Treatment of periodontal disease at home includes:

compliance with medical recommendations;

taking medication;

additional oral hygiene;

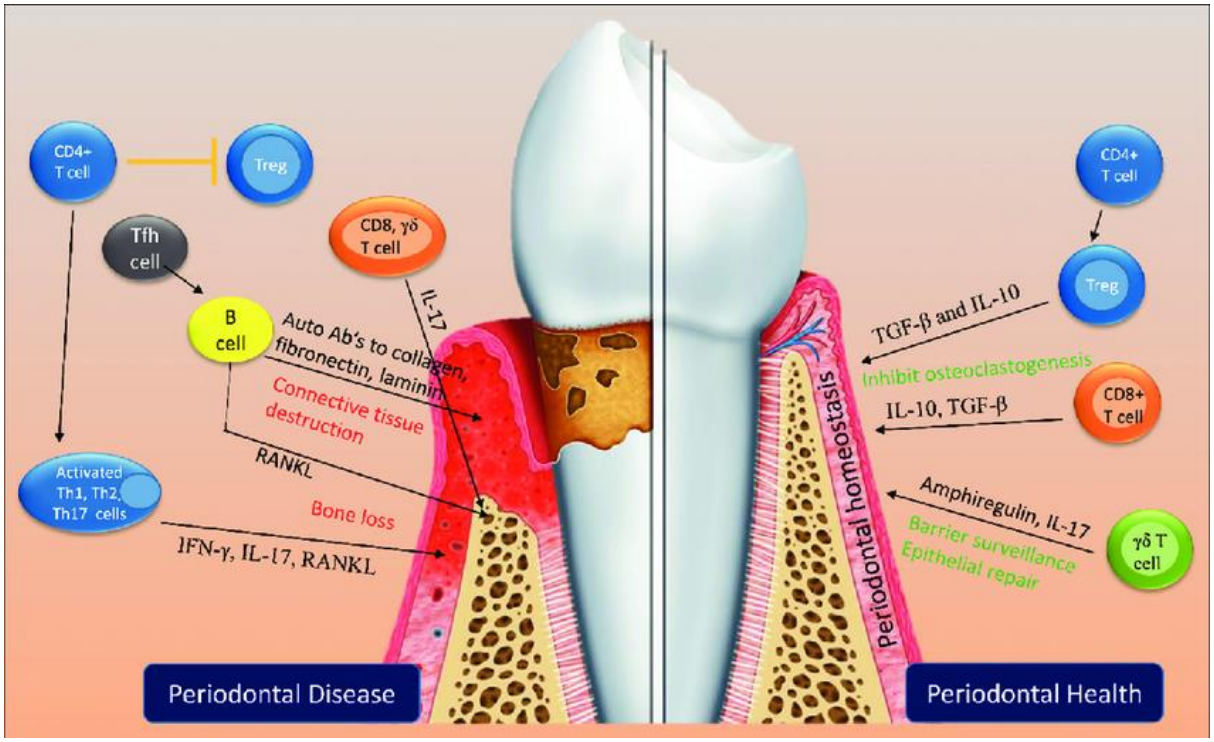
following a diet.

Step-by-step treatment of periodontal disease includes:

Professional teeth cleaning (ultrasound, laser, air flow). For heavy compounds, curettage (cleaning) of periodontal pockets is used. Closed curettage is effective for pocket depths up to 5 mm. For deep deposits (more than 5 mm), open curettage is performed with surgical separation of the gums.

Treatment of caries, pulpitis. A devital method is used to remove the pulp completely or in pieces, with the placement of a safe non-toxic paste (a modern analogue of arsenic) and the installation of a temporary filling.

Splinting, otherwise the joining and strengthening of the teeth of a single tooth. It is made using fiberglass tape or armid thread.



Equipment physiotherapeutic procedures. Laser, electrophoresis, darsonval and ultrasound treatment are used to restore tissue trophism, stop destruction and eliminate the inflammatory process.

With periodontitis accompanied by periodontal growth, gingivectomy is prescribed - cutting the inflamed area of the gums.

The last stage of treatment is plastic surgery. It is performed to restore the aesthetics of the physiological contour of the gums.

Effective rehabilitation methods include:

gingivoplasty;

valve surgery;

vestibuloplasty;

Property recession.

The patient's body provides medical support with injections of vitamin and mineral complexes, anti-inflammatory drugs and biogenic stimulants.

Preventive measures

The main prevention of gum pathology is a timely visit to the dentist. Detection and treatment of dental diseases at an early stage helps to prevent the development of complications. This is especially true for people with chronic pathologies of internal organs. Periodontal disease is very difficult to completely treat, which emphasizes the importance of strengthening periodontal tissues by eating a balanced diet, avoiding bad habits and maintaining good oral hygiene.

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