CHANGES IN THE ORAL MUCOSA IN DIABETES MELLITUS

Xolboeva N A

5th year students:

Ravshanov Umidjon

Murodullaev Xojiakbar

ANNOTATION

Diabetes mellitus is a chronic disease associated with a violation of carbohydrate metabolism. The disease develops gradually: for many months and years, patients may feel o dry mouth, o burning and pain when eating and talking, o decreased taste sensitivity, thirst;

o suffer from copious and frequent urination, sudden "causeless" weight loss, weakness, decreased performance, high susceptibility to inflammatory processes.

Key words: frequent urination, sudden "causeless", Diabetes mellitus affects

Diabetes mellitus affects all tissues and organs of the body. The classic complications of diabetes mellitus are well studied and are dealt with by specialists in other areas.

Patients suffering from diabetes develop pathological changes – vascular disorders, an imbalance of fat and collagen metabolism, the production of various growth factors that increase the risk of periodontitis.

The carefully collected medical history of the patient is aimed at preventing all possible complications that may occur during the rehabilitation of the oral cavity, both by therapeutic methods and by surgical interventions or orthopedic treatment.

An early symptom of diabetes mellitus is an increase in the parotid glands, which leads to xerostomia (dryness in the oral cavity). Xerostomia contributes to the development of gingivitis, candidiasis, caries, and stomatitis. Bacterial endotoxins, antigens and other virulent factors "trigger" immune and inflammatory reactions in the host body. As a result of these events, a localized reversible inflammatory process is formed – gingivitis. Over the years, the condition of periodontal tissues worsens; signs of chronic generalized periodontitis of moderate

and severe degree develop with increasing progression, which is manifested by an increase in the depth of periodontal pockets, loss of dental attachment, abscessing, pronounced tooth mobility, and destructive processes in the bone tissue of the jaws.

Timely treatment of periodontitis helps prevent the development of diabetes complications such as nephropathy and cardiovascular pathology, which often cause death.

Epidemiological studies of diabetes mellitus indicate the absolute need for periodontal treatment, which allows us to state an increase in the frequency of caries, erosive lesions and wedge-shaped defects of hard tooth tissues.

Diabetes mellitus is accompanied by candidiasis of the oral mucosa: the mucous membrane is dry, thinned, bright red. Chronic mechanical and chemical injuries, smoking can lead to the development of various forms of leukoplakia, trophic ulcers.

When combined with a history of diabetes mellitus and hypertension, lichen planus is diagnosed, characterized by a severe course. Correction of the condition of the oral mucosa in diabetes mellitus is symptomatic and can improve the quality of life of patients.

Prevention of infectious diseases and injuries helps to fight ulcerative forms of leukoplakia, lichen planus. High-quality professional oral hygiene, individual hygiene training with the selection of oral hygiene products, preventive examinations can reduce the frequency of exacerbations in periodontal diseases with diabetes mellitus.

Dispensary observation of an endocrinologist, regular visits to a dentist should become the main and fundamental in the life of patients suffering from diabetes mellitus.

The human body is a single whole, and the disease destroys this unity. Therefore, oral health is so important for the health of the body as a whole.

Diabetes mellitus is an endocrine disease characterized by a chronic increase in blood sugar levels due to absolute or relative insulin deficiency. This is a

common disease among mankind. The first signs and symptoms of diabetes mellitus can occur in the oral cavity, therefore, special attention to changes in the oral cavity can contribute to the early diagnosis and treatment of diabetes.

A patient with diabetes mellitus is at risk for diseases of the oral cavity, so he should pay attention to any adverse changes in the mouth and seek dental advice in a timely manner.

Purpose and objectives of the study:

Develop questionnaires. To conduct a survey of patients of the endocrinological department of the Orenburg Regional Clinical Hospital suffering from type I diabetes;

Perform oral sanitation in these patients;

3. Collect mixed saliva and assess the condition of the oral cavity according to some biochemical parameters.

MATERIALS AND METHODS OF RESEARCH

At the first stage, we selected patients aged 50-70 years, in the number of 30 people diagnosed with type II diabetes. At the first stage, we conducted a questionnaire that included the following questions: age, occupation, place of residence, use of medications, use of diet No. 9, concomitant diseases, visits to the dentist.

Saliva was collected on an empty stomach without stimulation after brushing teeth, by spitting into a test tube in an amount of 3-5 ml, centrifuged (10min, 1000ob/min), the infusion fluid was collected and stored at a temperature of -400C. The following biochemical parameters were determined in the studied samples: saliva pH using a universal indicator paper, qualitatively glucose with Fehling reagent, quantitatively glucose by "Glucotest" total protein – biuretic method on an Apel spectrophotometer (Japan). The protein concentration was determined using a graded graph constructed using a standard protein. Urea and the activity of the

alpha–amylase enzyme were determined using standardized biochemical kits for these definitions.

RESULTS AND DISCUSSIONS

The results of the survey and examination of patients showed that the manifestations of diabetes mellitus in the oral cavity in the form of multiple carious (73%) and non-carious lesions (67%), loss of filamentous papillae of the tongue (53%), inflammation of the mucous membrane (33%), xerostomia (80%). During the survey, all the interviewed patients (100%) do not follow the diet No. 9 recommended for diabetes. Diabetes mellitus is accompanied by severe metabolic disorders and the early occurrence of angiopathies in periodontal tissues, which leads to periodontal disease. Metabolic disorders are often accompanied by osteoporosis and osteolysis, which further aggravates the periodontal condition.

The results of a biochemical study of mixed saliva showed that in all patients with diabetes mellitus, the pH of saliva shifts to the acidic side by 10%. A change in the pH of the mixed saliva medium to the acidic side increases the risk of caries, being an activator of the plaque deposition process, gum irritation, it becomes hyperemic and bleeds. In 90% of patients, the reaction to glucose is positive and exceeds 2 times (the norm of 0.006-0.17 mmol / l) was 0.37 mmol / L. Glucose is an aggravating factor, serves as a nutrient medium for microorganisms. The amount of urea in patients increased by 5% compared to the norm (3.3mmol/l). These indicators characterize the severity of the inflammatory process in the periodontal of the examined patients. Saliva alpha amylase activity increased by 42%, total protein by 30%.

Based on the data obtained and the study conducted, it was possible to conclude that almost all patients with diabetes mellitus need constant dental care and certain recommendations.

Hyperglycemia leads to extracellular and intracellular dehydration, disruption of the stability of cell membranes and, as a consequence, the energy metabolism of skin cells, sebaceous and sweat glands. These changes lead to disruption of the normal restoration of the epidermis and the formation of a

protective fat film. Visually, this is manifested by pronounced dryness, decreased elasticity and turgor of the skin, the appearance of peeling and hyperkeratosis in areas of friction or pressure.

Hyperinsulinemia and insulin resistance – excessive binding of insulin to receptors of insulin-like growth factor 1 of keratocytes and fibroblasts, leads to epidermal hyperplasia (hyperkeratosis).

Autoimmune mechanisms often play a role in patients with type 1 diabetes, the structural units of the skin in this case are damaged by immune complexes.

Violation of lipid metabolism. In uncontrolled diabetes, the inability to metabolize and release triglyceride-saturated chylomicrons and very low-density lipoproteins can lead to a significant increase in plasma triglyceride levels and their accumulation in the skin. Violation of lipid metabolism contributes to the development and progression in all patients with DM of arteriosclerosis.

In addition to metabolic causes in the formation of disorders on the part of the skin and its appendages, a violation of their trophism plays an important role due to the angio- and polyneuropathy present in a patient with DM:

Angiopathy. Elevated blood sugar levels for a long time can lead to circulatory damage in both large arteries and small vessels (capillaries), which help deliver nutrients to skin cells – provide its trophism. In combination with atherosclerosis of large vessels, these microvascular disorders contribute to the formation of diabetic ulcers.

Polyneuropathy. Most patients with long-term uncompensated DM have a loss of sensitivity in the legs to pain, temperature and tactile influences, a violation of the excretory function of the skin dependent on innervation. This leads to the formation of hyperkeratosis, violation of the trophic skin, injury to the skin of the lower extremities, often not noticeable to the patient himself.

Bacterial and fungal infection. Angio- and neuropathy increase the risk of skin damage in patients with DM, while healing processes suffer. These changes,

combined with chronic hyperglycemia, contribute to the attachment of the infectious component.

Currently, dozens of types of dermatoses have been described that either precede diabetes or develop against the background of the disease. There are several classifications of skin lesions in DM. They are based on the clinical characteristics and some aspects of the pathogenesis of skin changes.

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