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PATHOGENETIC PREVENTION OF PROSTHETICS STOMATITIS IN PERSONS WITH INTERNAL DISEASES

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Primary and secondary prevention of prosthetic stomatitis in patients using removable dentures remains a topical and priority area of dentistry. The methods of prevention of chronic prosthetic stomatitis developed in the background of their internal diseases developed and tested by the authors of the article are effective, reduce the number of visits for prosthesis correction, are accessible and easy to perform for elderly and senile patients. They improve the adaptation of the oral mucosa to the basis of a removable prosthesis, adjust the general condition of the body and thus improve the quality of life of patients, as evidenced by the normalization of their psycho-emotional status. An individualized and differentiated approach to maintenance therapy prevents exacerbation of prosthetic stomatitis during the year in 78 % of patients.

Keywords: stomatitis, prevention, altan, thiotriazoline, biol, quertin

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ПАТОГЕНЕТИЧНА ПРОФІЛАКТИКА ПРОТЕЗНИХ СТОМАТИТИВ У ОСІБ ІЗ ВНУТРІШНІМИ ХВОРОБАМИ

Первинна та вторинна профілактика протезних стоматитів у пацієнтів, що користуються знімними зубними пластинковими протезами, залишається актуальним та пріоритетним напрямком стоматології. Розроблені та апробовані авторами статті методи профілактики хронічного протезного стоматиту, що виникає у пацієнтів на фоні їх внутрішніх захворювань, ефективні, скорочують кількість відвідувань для корекції протезів, доступні й легкі у виконанні для пацієнтів похилого та старечого віку. Вони покращують пристосування слизової оболонки порожнини рота до базису знімного протеза, корегують загальний стан організму і тим самим підвищують якість життя пацієнтів, про що свідчить нормалізація їх психоемоційного статусу. Індивідуалізований та диференційований підхід до підтримувальної терапії запобігає загостренню протезного стоматиту протягом року у 78 % випадків пацієнтів.

Ключові слова: стоматити, профілактика, альтан, тіотріазолін, біоль, квертин

The work is a fragment of the research projects "Application of new technologies, diagnosis and treatment of functional pathology of the dental and maxillofacial system", state registration No. 0121U11381 and "Development of pathogenetic prevention of pathological changes in the oral cavity of persons with internal diseases", state registration No. 0121U108263.

Primary and secondary prevention of prosthetic stomatitis in patients using removable dentures does not lose its relevance and continues to be a priority in orthopedic and therapeutic dentistry. In the pathogenesis of diseases of the oral mucosa, a significant role is played by internal diseases of the human body, which lead to violations of structural and functional changes in the oral cavity [2, 3, 8]. Studies show that microcirculation disorders are accompanied by the development of tissue hypoxia: thrombosis and

embolism of microvessels are found not only in the deep layers of the mucous membrane, but also in the superficial, which generally indicates a violation of microcirculation in this area. and leads to tissue progression [1, 9].

According to our clinical data, in some patients after prosthetics there is redness, swelling of the mucous membrane, accompanied by itching, heartburn. Without treatment, erosions, canker sores, and ulcers can occur due to inflammation. Among the reasons for such complications after prosthetics, in our opinion, are changes in the general condition of the body. During the period of adaptation to the newly made new prostheses in the process of adaptation, as a rule, there is an injury to the mucous membrane by the base of the prosthesis. After the initial correction in patients, the adaptation process is without complications and does not require additional treatment. Patients with internal diseases during the use of prostheses note periodic damage to the oral mucosa for a long time.

According to modern scientific studies, the severity and frequency of diagnosis of prosthetic stomatitis are much higher in patients with systemic somatic pathology. Among endocrine diseases, the largest percentage belongs to diabetes, the most characteristic manifestation of it on the mucous membrane is the defeat of the vessels of the microcirculatory tract: arterioles, precapillaries, capillaries, venules – diabetic microangiopathy [5]. The role of free radical oxidation in the pathogenesis of diabetes mellitus, periodontal tissue damage, oral mucosa has been established, which justifies the use of antioxidants in local and general therapy of this pathology [7].

Under the influence of removable plate prostheses, the condition of the tissues of the prosthetic bed changes over time, in particular, there are functional and morphological changes in the mucous membrane of the oral cavity. Gastrointestinal diseases that are most common in such patients are chronic gastritis, enterocolitis, gastroduodenitis, hepatocholecystitis and others. Removable prostheses of various designs transmit the masticatory load to the alveolar processes through the mucous membrane of the oral cavity, thereby delaying its self-cleaning. This, in turn, changes the balance between many species of microorganisms and provokes local catarrhal inflammation. The pathogenic effect of the microflora on the tissues of the prosthetic bed in this situation is of fundamental importance, so it is important to choose a drug with simultaneous antibacterial and anti-inflammatory action.

Among the diseases of the cardiovascular system that are most common in patients using removable acrylic dentures are coronary heart disease and others. The exacerbation stage of these diseases can be manifested on the mucous membrane of the oral cavity in the form of catarrhal inflammation, which provokes and supports prosthetic stomatitis. This determines the adherence to a comprehensive differentiated and individualized approach to patients with prosthetic stomatitis who have diseases of the cardiovascular system [4].

This determines the need for pathogenetic approaches to the problem of primary and secondary prevention of prosthetic stomatitis in patients with pathology of internal organs. Currently, despite the variety of methods of treatment and prevention of prosthetic stomatitis, the problem remains relevant. The authors consider promising the use of new schemes of pathogenetic prevention of prosthetic stomatitis, which include not only local interventions, but also a systematic approach to the treatment of patients.

The purpose of the study was to improve the efficacy of primary and secondary prevention of prosthetic stomatitis in patients with various internal diseases on the basis of developed own methods.

Materials and methods. Our study is based on the results of the examination and treatment of 33 patients, including 16 (48 %) women and 17 (52 %) men aged 40–74 years. All respondents with a diagnosis of “prosthetic stomatitis, local, chronic course” used removable plate dentures made of acrylic plastic and had the experience of using them for at least five years. Patients gave and signed a voluntary consent to perform dental procedures (F.043/O), were informed about the nature, potential risks and benefits of their participation in the study.

Depending on the systemic pathology, patients were divided into three randomized groups: group I – 11 patients, including 4 (36 %) women and 7 (64 %) men aged 40–74 years, with confirmed gastrointestinal pathology mostly chronic gastritis); group II – 12 patients, including 6 (50 %) women and 6 (50 %) men aged 58–72 years, with a confirmed concomitant diagnosis: “type 2 diabetes”; group III – 10 patients, including 6 (60 %) women and 4 (40 %) men aged 55–74 years, with confirmed pathology of the cardiovascular system (mostly coronary heart disease). As a comparison group used data were obtained from previous studies [11].

Criteria for inclusion of patients in the study groups were: the presence of prosthetic stomatitis; concomitant pathology of the gastrointestinal tract, cardiovascular system or diabetes mellitus; availability of a form of informed consent. Criteria for exclusion of patients from the study groups were: the presence of severe (decompensated) diseases of the internal organs; neuropsychiatric disorders; the presence of other

diseases of the oral cavity with a violation of the integrity of the oral mucosa, requiring specific therapy; taking corticosteroids at the time of examination.

Clinical examination of patients included general and dental examination. The study of the dental status of patients with prosthetic stomatitis was based on clinical methods: survey, examination, palpation, as well as index assessment: determination of oral hygiene according to Green-Vermillion (1964), the condition of the prosthetic bed mucosa according to Schiller-Pisarev glycogen test. The diagnosis was established according to the classification of Z.S. Vasilenko (1977). General examination of patients was performed by appropriate internists according to protocols [6].

Patients of group I used our proposed “Method of treatment of prosthetic stomatitis on the background of diseases of the gastrointestinal tract” (No. 104788, Ukraine, 2021) and “Method of maintenance therapy of prosthetic stomatitis on the background of diseases of the gastrointestinal tract” (No. 104202, Ukraine, 2021), which was carried out as follows: after the rehabilitation of the oral cavity, patients were prescribed Tantum Verde lollipops (manufacturer: Italy), 3–4 times a day for 10–14 days. The complex of prophylaxis includes Altan tablets (PJSC “Borschagovsky Chemical-Pharmaceutical Plant”, Ukraine) orally, 1 tablet 2–3 times a day, 15–20 minutes before meals, for 30 days.

Patients of group II used our method of treatment of prosthetic stomatitis on the background of diabetes mellitus (No. 102722, Ukraine, 2021), which included the drug Tiotriazoline (PJSC “Borschagovsky Chemical-Pharmaceutical Plant”, Ukraine). The method was carried out as follows: after correction of the prosthesis and rehabilitation of the oral cavity, patients were prescribed applications to the oral mucosa (areas of the prosthetic bed, most prone to trauma, namely: maxillary humps sublingual, retromolar and retroalveolar space) ointment tiotriazolin 2 %, daily for 7–10 days. Outside the clinic, patients were recommended to apply the ointment by applying to its surface the base of the prosthesis in contact with the oral mucosa. For general therapy, oral Tiotriazoline in tablets of 100 mg once daily for 30 days was prescribed. “Method of maintenance therapy of prosthetic stomatitis on the background of diabetes mellitus” (No. 102771, Ukraine, 2021) was carried out as follows: after rehabilitation of the oral cavity, patients were prescribed tablets for resorption of lollipops (JSC “Farmak”, Ukraine), 3–4 times a day, course 5–7 days; as a part of complex maintenance therapy – Kvertyn tablets (PJSC “Borschagovsky Chemical-Pharmaceutical Plant”, Ukraine) 1 tablet 2 times a day for 30 minutes before meals, a course of 30 days.

Patients of group III used our proposed “Method of treatment of prosthetic stomatitis on the background of cardiovascular insufficiency” (No. 107053, Ukraine, 2021): after correction of the prosthesis, patients were prescribed applications to the oral mucosa, prosthetic bed, most prone to trauma, peloid therapy means Biol (CJSC Ukrprofozdorovnytsia, Ukraine), daily, for 7–10 days. Additionally, after consultation with a cardiologist, Coenzyme Q10 (UA-PHARM, Ukraine) was prescribed at 60 mg per day, daily for 3–4 weeks. “Method of maintenance therapy of prosthetic stomatitis on the background of cardiovascular insufficiency” (No. 107052, Ukraine, 2021) was used as follows: appointed lollipops Lisobakt DUO (Bosnalijek, Bosnia and Herzegovina) 3–6 lollipops per day for 5 days; drug coenzyme Q10, 60 mg per day, a course of 3–4 weeks.

Patients were on a stable diet recommended by internists according to their internal diseases.

People with diseases of the gastrointestinal tract, cardiovascular system, pathology of the endocrine system, allergic diseases, chronic diseases of periodontal tissues and oral mucosa belong to the group of increased risk of prosthetic stomatitis. The methods of pathogenetic prophylaxis used by us showed a pronounced therapeutic effect in patients with prosthetic stomatitis of all clinical groups, which was observed on the 2 day of clinical observations. This was expressed in the disappearance of pain and discomfort in the oral cavity, improving the general condition of the body, the normalization of psycho-emotional state; when examining the local status – in reducing the intensity of inflammation of the mucous membrane of the prosthetic bed.

Patients of group I as the main complaints at the initial examination noted discomfort in the mouth, heartburn, and sometimes indicated biting of the tongue and cheeks. A history of the disease showed that 5 (45 %) patients considered dentures to be the cause. The development of disease 2 (19 %) was associated with gastritis; other patients (4 persons, 36 %) – could not explain the occurrence of prosthetic stomatitis for any specific reason. The disease had a chronic course. After the onset of the disease, 4 women (36 %) sought medical help from a dentist, however, the results of their previous treatment were not effective enough; 7 men (64 %) did not seek dental care. Flowchart and research design (fig. 1).

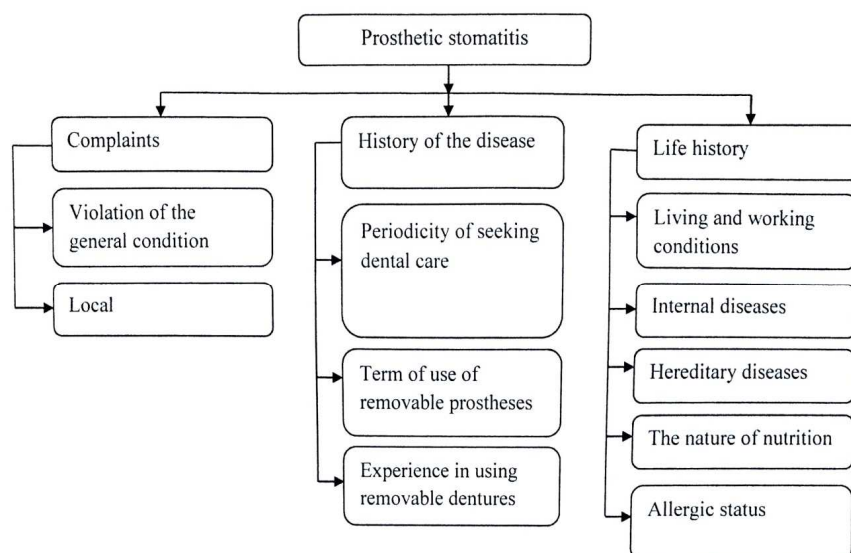


Fig. 1. Subjective examination program a patient with prosthetic stomatitis

In the study of dental status in patients of group I were found anomalies of occlusion, changes in the location of individual teeth, reduced masticatory efficiency. Pathological changes were found in all patients: hyperemia and edema of the oral mucosa, imprints of teeth on the lateral surfaces of the tongue and cheeks along the line of tooth closure, plaque on the tongue; on palpation of the affected areas within the prosthetic bed there were unpleasant sensations.

When examining the condition of the teeth, the presence of carious process and non-carious lesions was noted in 6 (55 %) of the examined persons. The level of oral hygiene according to the Green-Vermillion index on average in the group was 1.9 ± 0.2 points. When examining the condition of periodontal tissues, pathological changes were observed in all subjects, Schiller-Pisarev test was positive. After the prescribed complex therapy of prosthetic stomatitis and rehabilitation of the oral cavity, the condition of the oral mucosa in patients returned to normal. All patients were registered at the dispensary and received practical recommendations six months after the application of the method of treatment of prosthetic stomatitis to undergo courses of maintenance therapy. The first course of local therapy lasted an average of 12 ± 2 days; general therapy – 30 days.

Group II patients complained of discomfort, dry mouth. From the history of the disease it is known that the pathological process has a chronic course, disturbing for the last 3–5 years. The analysis of the survey data showed that the vast majority (9 people, 75 %) did not seek medical help; 5 women (42 %) were treated independently. Objectively: dry, dull mucous membranes of the mouth with signs of catarrhal inflammation and pain on palpation. When examining the condition of the teeth: the presence of carious process and non-carious lesions was noted in 5 (42 %) of the examined persons, teeth with complicated caries were not detected. The level of oral hygiene according to the Green-Vermillion index averaged 1.8 ± 0.2 points per group. Examination of the periodontal tissues revealed chronic inflammatory processes, Schiller-Pisarev test – positive. The course of local therapy of prosthetic stomatitis lasted on average 9 ± 2 days before the disappearance of clinical manifestations of inflammation of the mucous membrane of the prosthetic bed and the mucous membrane of the oral cavity as a whole; general therapy for 30 days. Dynamic observation by a dentist, maintenance therapy courses in six months, and a diet to limit carbohydrate intake were prescribed. Flowchart and research design (fig. 2).

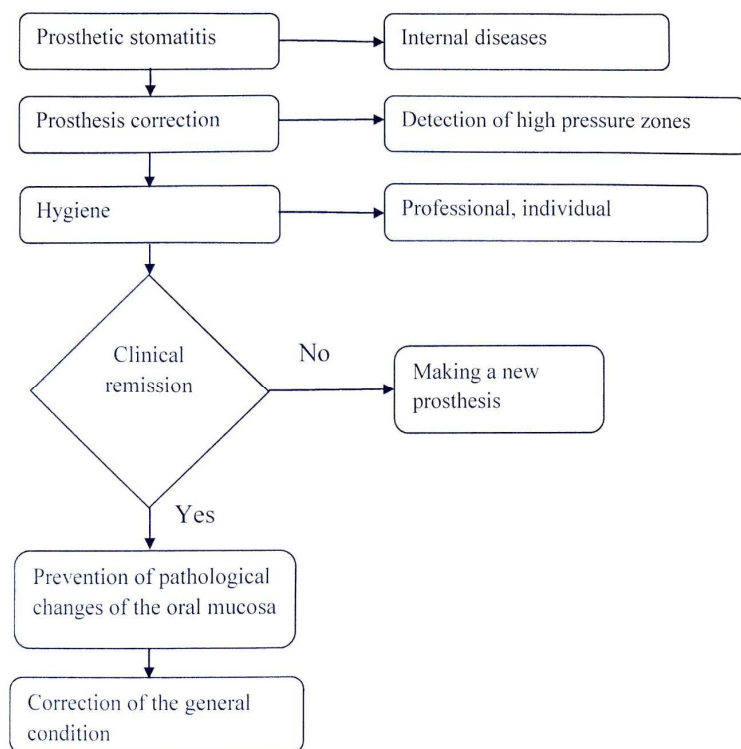


Fig. 2. Secondary Prevention Program for patients with prosthetic stomatitis dentist

Flowchart and research design (fig. 2).

Group III patients complained of discomfort and pain under the prosthesis, sometimes with muscle fatigue. Analysis of anamnestic data showed that the disease has a chronic course, with the majority of patients (8 people, 80 %) treated themselves. Objectively detected: cyanosis, pastosity of the oral mucosa, edema, propensity to form trophic ulcers at the site of injury; periodontal status of patients: Schiller-Pisarev test positive, chronic generalized periodontitis of various degrees of severity. The presence of teeth with caries and non-caries lesions was noted in 2 (20 %) subjects. The level of oral hygiene according to the Green-Vermillion index on average in the group was 2.2 ± 0.2 points. The course of local therapy of prosthetic stomatitis lasted an average of 9 ± 3 days; general therapy for 28 days. A course of maintenance therapy was recommended six months later (fig. 3).

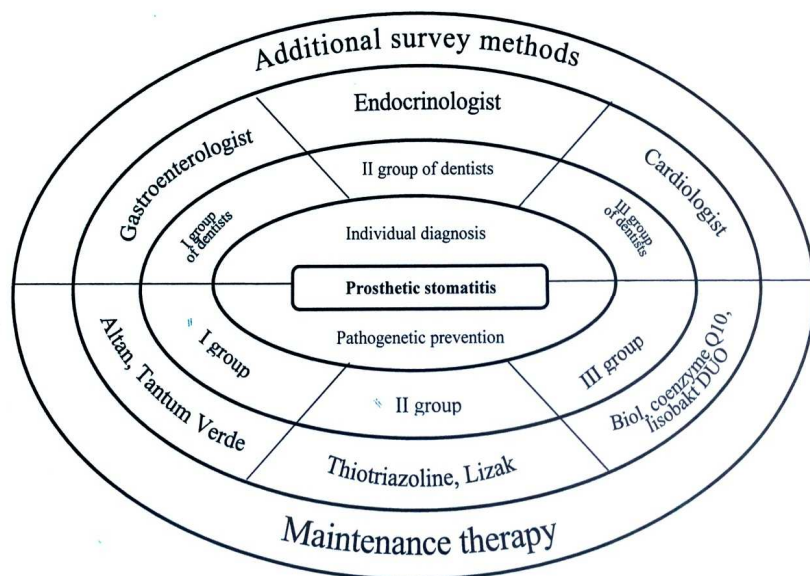


Fig. 3. Individual prevention program for a patient with prosthetic stomatitis

studied, their positive properties and disadvantages were studied in comparison with the methods developed by us. Close to our proposal is "Method of prevention and treatment of prosthetic stomatitis in the complete absence of teeth" (No. 109977, Ukraine, 2015). The authors of the method of prevention studied the effectiveness of the anti-inflammatory drug amaranth oil, which contains 8 % squalene, which improves the general condition of the body and gastrointestinal tract. However, this method has disadvantages due to the fact that the use of amaranth oil has contraindications: gallstones, cholecystitis, acute and chronic pancreatitis.

Known "Method of treatment of prosthetic stomatitis on the background of metabolic syndrome" (No. 85958, Ukraine, 2019), which coincides with the use of ointments with thiotriazoline. However, the presented method has disadvantages due to the fact that it is aimed only at the treatment of prosthetic stomatitis on the background of metabolic syndrome and does not take into account other pathologies in patients, in particular, diabetes. In addition, the drug Trimetazidine, which has antihypoxic effect and is able to regulate energy metabolism, is recommended for use only in the complex therapy of ischemic cardiomyopathy, chorioretinal vascular disorders, Meniere's disease.

Close, in our opinion, is "Method of complex prevention and treatment of pathological changes of prosthetic bed tissues during prosthetics with removable plate dentures" (No. 15667, Ukraine, 2006), which includes after fixation of prostheses vacuum therapy with a vacuum of 412 GPa and appointment preparation of soy isoflavones "EXO". This tool has an antioxidant effect, which coincides with our use of drugs altan, quertin, thiotriazoline. However, the known method has disadvantages due to the fact that the authors do not propose the prevention of microbial factors in the development of possible complications with the use of removable dentures, and the patient must daily for ten days to appear in the dentist's office for vacuum therapy, which is inconvenient for elderly and senile patients.

The results of our research confirm and supplement the literature data [1, 3, 11]. In our proposed methods in order to prevent injury to the mucous membrane by the base of a removable plate prosthesis and accelerate habituation, differentiated functional impressions were obtained and prostheses with a two-layer base were made; it was recommended to apply ointments at home by self-application on the inner surface of the base of the prosthesis. General-acting drugs were prescribed after examination and consultation with interns in accordance with the patient's internal diseases.

The results of secondary prevention and maintenance therapy of patients in three clinical groups were analyzed according to the criteria of effectiveness: remission, improvement, unchanged, deterioration. A differentiated approach to maintenance therapy of patients with an interval between courses of six months has proven the effectiveness of pathogenetic prevention of prosthetic stomatitis by anamnestic and clinical indicators.

To achieve this goal, the known methods of prevention of prosthetic stomatitis were

Prosthetic stomatitis, which occurs under the influence of removable plate prosthesis on the background of confirmed somatic pathology, we consider as symptomatic secondary stomatitis with a chronic course [5, 6]. According to our data, the ability of the mucous membrane to absorb stress and function in new unusual conditions is influenced by the presence of patients with some chronic diseases of the gastrointestinal tract, cardiovascular system and type 2 diabetes. Therefore, symptomatic prosthetic stomatitis requires a comprehensive approach: local secondary prevention of pathological changes in the oral mucosa, correction of the general condition of the patient, as well as dynamic periodic monitoring.

Thus, the methods developed and tested by the authors of the article to prevent chronic prosthetic stomatitis that occurs in patients with their internal diseases are effective, have no side effects, reduce the number of visits for prosthesis correction, affordable and easy to perform for elderly and senile patients. They improve the adaptation of the oral mucosa to the base of the removable prosthesis, adjust the general condition of the body and thus improve the quality of life of patients, as evidenced by the normalization of their psycho-emotional status.

Conclusion

The need for not only local interventions, but also a systemic approach to the secondary prevention of prosthetic stomatitis in patients with pathology of the gastrointestinal tract, cardiovascular system and type 2 diabetes has been proven.

Individualized and differentiated approach to maintenance therapy prevents exacerbation of prosthetic stomatitis during the year in 78 % of patients.

The proposed methods of pathogenetic prevention of prosthetic stomatitis in persons with internal diseases are effective, modern, can be recommended for use in orthopedic and therapeutic dentistry.

Prospects for the research. It is planned to further search for effective methods of primary and secondary prevention of patients with prosthetic stomatitis, which are confirmed by microbiological, functional additional research methods, psychological techniques. Requires further study of the prevention of prosthetic stomatitis with removable prosthetics due to individual changes in the quantitative and qualitative composition of the microflora of the oral cavity.

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