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Methods of Testing the Condition of the Oral Cavity in Patients with Hiv Infection

Pulatova Raykhon Saidumarovna,
Bukhara State Medical Institute
Mustafaeva Dildora Asatovna
Republican AIDS Center, Deputy Director for Medical Work, Infectious Diseases Specialist

Abstract. The article presents data on the study of the state of tissues and organs of the oral cavity with HIV-infected (n=47), for the period from 2020 to 2023, were divided into groups: The main group (M/G) - 23 patients who used removable partial prostheses and - 24 patients, patients with dusty removable prostheses, also 20 patients of moderate severity of periodontal disease without HIV infection as a control group.

Key words. HIV-infected, deficiency caused antibiotic, chemotherapeutic agents.

The treatment of oral diseases (OD) by HIV-infected people is complicated by the state of progressive immuno- deficiency caused by the carrier of HIV against the background of the pressure of concomitant infections, the massive use of antibiotics and other chemotherapeutic agents [10, 16, 17,] and has its own characteristics: prescribe large doses of drugs, increase the duration of their use, carry out targeted preventive administration [15, 18]. The success of the treatment and prevention of secondary adentia, which is a consequence of caries and periodontal diseases, by replacing defects in the denti- tion with removable and non-removable denture structures depends on the correct preparation of an orthopedic treatment plan, on the choice of an adequate design of dentures and materials, as well as their hygienic condition (HC) [1, 2,3]

Infection caused by the human immunodeficiency virus (HIV), which subsequently develops into acquired immunodeficiency syndrome (AIDS), has become one of the most pressing problems of the 21st century. HIV infection is rapidly spreading throughout the world and the number of people infected with this infection is increasing.

It is known that HIV infection affects various organs and systems, including organs and tissues of the oral cavity. Oral lesions in HIV-infected patients develop against the background of a violation of secretory homeostasis and are characterized by polymorphism and combinability, which depends on the stage of the disease and the degree of immunosuppression.[7, 8, 11]

Oral lesions associated with HIV infection in adults include specific lesions of periodontal tissue [6, 12].

Due to a significant increase in the number of cases of HIV infection, the likelihood of a dentist's contact with HIV-infected patients increases.

In the foreign literature there are numerous publications reflecting the specifics of dental manifestations and treatment of HIV-associated lesions of the oral cavity [5].

However, these data cannot be fully used by domestic dentists, since they do not take into account the specifics of the epidemic process in our Republic. When analyzing the literature, we also did not find works by domestic researchers reflecting the clinical, diagnostic, treatment and prophylactic aspects of oral lesions in HIV infection. It is natural that another important aspect of the problem remains out of

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sight - the development of recommendations for the provision of specialized dental care, in particular orthopedic dental care for this group of patients.[9, 8]

Thus, the increase in the incidence of HIV infection, the increase in government costs for the treatment of HIV-infected people, the high degree of disability and mortality of patients (A.I. Shatokhin, 2008) determine the relevance of this problem, its medical, social and economic significance.[20, 21]

However, an analysis of the literature shows that the issues of providing or- thopedic dental care to people living with HIV continue to remain little or almost unexplored. Meanwhile, scientific research in this area would make it possible to develop a tactic approach to assessing the condition of HIV-infected patients and the specifics of providing dental, including orthopedic care, starting with addressing the issues of indications and contraindications to dental prosthetics, the timing of treatment, the choice of methods, designs, materials for the manufacture of dentures, as well as features of the care of OD, prostheses and tissues of the prosthetic bed.

The purpose of the study. To determine the quality and effectiveness of the use of various basic materials in the manufacture of removable dentures for HIV- infected patients.

Materials and methods. The studies were conducted in the period from 2020 to 2023, 47 patients were examined with a diagnosis of “HIV infection” estab- lished by a positive result of enzyme immunoassay (ELISA) with further confir- mation in the immunoblot (IB) in the branch of the Bukhara Clinical Laboratory of the Republican Center for Combating AIDS. Patients (n=47) were divided into groups, depending on the chosen method of orthopedic treatment:1 main group (M/G) - 23 patients: 11 patients who used partial removable prostheses (BEP); 12 patients underwent prosthetics with BRP and full removable dentures (FRP) using acrylic plastic “Фторакс”; 2 M/G- 24 patients, replacement of dentition defects, was performed with prostheses based on high-tech non-dimensional thermoplastic material “Vertex termosens”. The control consisted of 20 healthy patients with- out HIV infection, among them, in order to compare the state of immunological parameters of OD patients (n-14) with moderate periodontal disease (MPD). By gender: 76.2% of men and 23.8% of women%; by age: 18-25 years - 34.7%, 26-34 years -54.3%, 35-44 years -11.0% of the total number of surveyed.

The study began with an examination of the red border of the lips, cheeks, soft and hard palate, the bottom of the OD, gums, tongue, the area of the mucous mem- brane (MM) of the prosthetic bed, its bone base, paid attention to the degree and type of atrophy of the alveolar processes, color, moisture, swelling, malleability, the presence of pathological changes.

The state of hygiene of the OD was assessed using the simplified hygienic in- dex OHI-s (1969); the symptom of gingival groove bleeding was determined using a Muelleman-Cowell probe (1975) and the intensity of gingival bleeding (IGB) was assessed; intravital microangioscopy or stomatoscopy was used to monitor the dynamics of functional features of the state of the mucous membrane and microcirculation in a living organism [13]; gnathodynamometric studies obtained information on the functional state of periodontal tissues [4, 85, 12]; For radiologi- cal (R) evaluation of teeth and jaws, two types of radiography were carried out: contact SD - 1 or SD - 2 and panoramic on the orthopantomograph “Ortophos-3”.

To assess the local immunological state of the OD, oral fluid (OF) was col- lected in sterile test tubes in the morning and the concentration of SIDA was de- termined (J. Mancini) in all examined patients [7, 9], the activity of lysozyme in saliva was determined using the method proposed by Aliyev Sh.R. (1994) [9].

Scanning electron microscopy (SEM) (Hitachi S405A model) was used for morphological research methods, samples of acrylic plastics, after appropriate fix- ation, were dehydrated in alcohol-acetone, then dried by the critical point method in the NSR-2 apparatus and sprayed with gold in the IB-2 apparatus. Photograph- ing was carried out using a microscope monitor screen using a Canon digital

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SLR camera. Micrographs were subjected to computer processing on a Pentium IY computer using a Windows Professional program.

All the data obtained were processed using Microsoft Excel and Statistica-6 computer programs. Statistical processing of the results of the study was carried out by calculating the arithmetic mean (M), the standard deviation (8) and the average error of the indicator (m). The comparison of indicators between groups was carried out using the Student's t-test. The differences between the groups were considered statistically significant at $p<0.05$.

Results and their discussion. In the HIV-infected patients examined by us, catarrhal gingivitis was detected in 1-O/G - 56.8%, a mild form of periodontal inflammation - in 30.4% of patients, while PI - was 0.93± 0.25; with MPD, PI - 1.89±0.21 with pronounced destruction, confirmed by R-ci, was observed in 52.2% of patients. Severe periodontitis accounted for -17.4% of the total number of patients with periodontitis, and PI was -2.41±0.26. The depth of clinical pockets reached an average of 5.8 mm. 2-M/G: catarrhal gingivitis - in 61.4%, ulcerative necrotic – in 6.3%, mild periodontal disease - 27.5%, while PI was -0.98+0.27, PSST 52.3% of cases, with PI -2.1±0.24, severe periodontitis - 20.2% of cases when the PI value was 2.8 ±0.24. The weighted average value of the PR hygiene index (OHI-s) in 1-O/G was 2.64±0.27; in 2-M/G patients - 2.7±0.24, while the gum condition was 98.2% of the examined patients in both groups had spontane- ous bleeding of varying severity.

It should be emphasized that in comparison with similar teeth (C/G) of intact periodontal, patients with HIV infection showed a sharp (2-4 times) decrease in periodontal endurance to vertical and horizontal types of loads. The analysis of gnathodynamometric studies data convincingly indicates a sharp decrease in the functional state of the periodontal and a high loss of its ability to compensate for functional and structural disorders. It is obvious that HIV infection leads to severe changes in the functional state of the periodontal complex, this is manifested by a sharp drop in periodontal endurance to loads and loss of differentiation of loads in different groups of teeth. Leveling of gnathodynamometry indicators on vari- ous groups of teeth indicates a decrease in the functional state of the periodontal.

Conclusions. Patients with HIV are characterized by high rates of inflamma- tory periodontal diseases, spontaneous bleeding with a high need for periodontal treatment and poor hygienic condition of the OD. On the oral mucosa, the most pronounced changes are observed in the area of free and attached gums, which in- dicates the presence of severe inflammatory periodontal diseases in HIV-infected patients.

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