

Optimization of Diagnostics and Prevention of Dental Diseases in Industrial Workers

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Relevance. *There is a high prevalence and intensity, first of all, of caries and periodontal diseases in trained workers of industrial enterprises, as well as a great need among them for dental treatment and prosthetics [Kabirova M.F., Usmanova I.N., 2009; Leonova L.E., Kamenskikh M.V., 2011; Leskov A.S., 2012; Saradzhev, V.V., 2005; Khavkina E.Yu., Olesov E.E., Maksyukov S.Yu., Makeev A.A., Rogatnev V.P., Magamedkhanov Yu.M., Kuznetsov A.V., Kolyabina Yu.V., 2011]. At the same time, most workers with long experience have general somatic diseases, low motivation to preserve dental health and adequate oral hygiene remains [Dubinina L.M., 2008; Kolyabina Yu.V., 2010; Kononenko V.I., Bronstein D.A., Olesov E.E., Khlutkov E.S., Yarikina S.P., Kishko E.V., Zharov A.V., Rudakov V.A., 2012; Olesova V.N., Sorokoumov G.L., Balkarov A.O., Zakariyev Z.Z., Pavlova N.A., Musheev I.U., 2007]. Large industrial enterprises have departmental medical services, including dental, and sanatorium facilities for the medical rehabilitation of their employees. The interaction of dentists at the workplace and in the sanatorium needs to be analyzed in modern conditions.*

In the State Program of the Republic of Uzbekistan, priority attention is paid to the development of primary health care for the population. Medical dental care for the population is one of the most popular in the healthcare system and in many areas (preventive, therapeutic, surgical) it is advisable to refer it to the primary.

In the process of intensive industrial development, the study of the role of harmful and health-related factors of the production environment is timely and very important.

Workers of industrial enterprises are exposed to the combined action of many unfavorable factors of the production environment, which cause a decrease in the body's resistance and an increase in the frequency of pathology of periodontal tissues [1.3.5.7.9].

The most optimal form of organization of dental care in organized groups of workers with dangerous working conditions is medical examination, at the same time, the medical and economic features and effectiveness of the organization of dental care for employees of this category according to the dispensary principle have not been studied.

A certain complexity of solving the problems of improving dental care for chemical industry workers is determined by high indicators of the incidence of the dental system and, accordingly, a high level of need for dental care.

In the general structure of dental diseases, the frequency of inflammatory processes in the maxillofacial region ranges from 55-65%, and in the structure of acute purulent-inflammatory diseases, CHLO reaches 69.5% and currently tends to increase their specific gravity [2.4.6.8.12.16].

The long-term influence of a complex of production factors simultaneously with the deterioration of the health of workers, as a rule, can lead to pathological changes in the oral mucosa, periodontal diseases, hard tissues of teeth. In recent years, research has been carried out to study the problems of improving the organization of dental care for both the population as a whole and individual categories of industrial workers. At the same time, the realization of

preventive orientation in dental care of the working population remains an unsolved problem to date [10.11.13.14.15].

The development of pathogenic and non-pathogenic microflora of plaque is also influenced by factors such as constant contact with the microflora of the environment, the ingress of microorganisms with food, favorable conditions for the development of microbes - temperature, humidity, nutrient medium - [5.7.9].

The prevalence of diseases of the oral mucosa in these workers in the conditions of admission for the treatment reaches 26.6%, and with traditional oral sanitation, this indicator is comparable to the control groups and is almost 2 times lower than in group I - 13.7%. Medical examination in the standard volume of oral sanitation reduces the prevalence of non-carious lesions by 2 times. The need for orthopedic treatment in the average for all ages is 64.2%. In this regard, such fundamentally important issues as the construction of an adequate organizational model of the activity of the dental service of the region, taking into account the prevalence of the main types of dental diseases, the real needs of the population in various types of dental services and their relationship to material, technical, personnel and financial support, require scientific substantiation. In addition, conducting epidemiological dental programs in the regions and analyzing the data obtained, taking into account the influence of characteristic factors of the occurrence of dental diseases, are necessary to develop comprehensive approaches to prevention adapted to the needs of the population of a particular region. At the same time, it is necessary to take into account both the dental status of different age strata of the population and the level of dental care [2.8.10].

The implementation of this dissertation work is planned according to the plan and topics of research works of the Bukhara State Medical Institute named after Abu Ali ibn Sino for 2017-2021: "Development of new approaches to early diagnosis, treatment and prevention of pre-pathological and pathological conditions of the body in the hot climate of the Bukhara region."

Based on the duration of the dentist's work per year for one employed rate of 247 days (1630.2 hours) minus 42 days of vacation (198 hours) (as a result, 1432.2 working hours per year) and the labor costs for dental treatment in the sanatorium of one employee with an OT of 5.03 hours, during the year the dentist of the sanatorium can provide full-fledged treatment to 285 employees. When referring employees to sanatorium treatment after oral sanitation in departmental polyclinics at the place of work (after treatment of caries and its complications, primary training in individual hygiene, splinting of movable teeth), the need for treatment of dental diseases may decrease to 1.41 hours per 1 person admitted to the sanatorium, i.e. 3.6 times, which will allow the dentist of the sanatorium to increase the coverage of preventive treatment of employees to 1026 people per year. The lack of oral sanitation practice for employees before referral to general sanatorium treatment is manifested in the high prevalence of dental diseases and the need for their treatment at the sanatorium stage. Full-fledged dental treatment in the sanatorium is constrained by its labor intensity, which necessitates the development of up-to-date departmental regulations for the interaction of dentists at the place of work and the sanatorium [Novozemtseva T.N., Tikhonov V.E., Shaipova Z.A., Kryazhinova I.A., Kaganova O.S., Garus Ya.N., 2017].

When studying the indicators of local immunity in saliva, a decrease in the content of secretory immunoglobulin A was noted, the level and activity of lysozyme in nasal secretions were slightly reduced. The level of secretory immunoglobulin A and its fixation on the mucous membranes are considered the most important factor providing resistance to infections. Lysozyme has an antibacterial effect in combination with immunoglobulin A and complement. A decrease in the synthesis of immunoglobulin A and lysozyme indicates an immunodeficiency in the local immunity system.

With concomitant ENT pathology, an increase in the level of serum immunoglobulin M and a decrease in the absolute number of B lymphocytes are often detected [9.13.16]

Odontogenic inflammatory diseases and their complications have certain features that are characterized by pronounced microcirculatory disorders, the presence of microthrombs, dystrophic and necrotic processes, the predominance of the inflammatory component over the reparative one, inhibition of cell proliferation, inhibition of phagocytic activity of leukocytes, incomplete phagocytosis, a high degree of microbial contamination of wound tissues, a decrease in general and local immunological reactivity [2.16].

Purulent septic infections (GSI) are the most common complications in people with traumatic lesions of the maxillofacial region, received in road accidents (road accidents). The etiological agents of GSI in patients with injuries of the maxillofacial region are most often gram-positive microorganisms represented by enterococci, streptococci and *S. epidermidis*. For etiotropic therapy of purulent-inflammatory diseases of patients injured as a result of an accident who are being treated in the department of maxillofacial surgery of a multidisciplinary hospital, it is rational to use antibacterial drugs of the group of fluoroquinolones, glycopeptides and macrolides [2.3.9].

It was found that among gram-positive etiological agents

GSI of the maxillofacial region is dominated by representatives of the genus enterococci - 37.6%, streptococci 34.8% and *S. epidermidis*- 12.8% [Mitrofanova N. N. ssoavt., 2017].

The use of VitaVallis sorption material in the local treatment of maxillofacial phlegmon contributes to a faster improvement in the general condition of the patient and the relief of local signs of purulent-inflammatory process, which reduces the time of inpatient treatment of patients by 4.35 ± 1.41 bed days ($p < 0.05$). The developed drainage sorbent is a highly effective new generation agent for the local treatment of purulent wounds [Tazin D.I., Shakirov M.N., 2018].

It is known that the ecological system of the oral cavity balances between the immune response and tolerance to bacterial antigens [Eriksen H. , 2006]. The high pro-inflammatory potential is reflected in the increased secretion of cytokines, and this process is permanent, since the oral cavity is not sterile [Martynova E. A., Makeeva I. M., Rozhnova E. V., 2008]. However, the secretion of pro-inflammatory cytokines cannot be uncontrolled, since excessive concentrations of interleukins are pathogenic and can initiate a local inflammatory process [Lyanova D. K., Kosyreva T. F., Drozdova G. A. , 2009].

It was found that in the gingival fluid of patients with odontogenic abscesses, the level of autoantibodies of the sIgA class to IL-8 increases in comparison with their content in healthy patients. By IL-10, the concentration of autoantibodies decreases in patients compared to the level of healthy ones. The increase in the content of aAt to IL-8 probably reflects the level of increased concentrations of antigenic epitopes of this cytokine. The decrease in the concentration of aAt to IL-10 may be due to their "consumption" as a result of the "antigen – antibody" reaction [Ignatov M. Yu. et al., 2010].

With the development of an abscess, an increase in the level of pro-inflammatory (IL-1 β , IL-6, IL-8) and a decrease in anti-inflammatory (IL-4, IL-10) cytokines in oral and gingival fluids were revealed. At the same time, the content of autoantibodies of the sIgA class to IL-8 increased, to IL-10 – decreased [M.Yu Ignatov et al., 2019].

The analysis of the literature data of recent years shows the need to study and improve the methods of diagnosis and treatment of industrial plant workers with dental diseases.

Purpose of the work: analysis of dental morbidity and the need for dental treatment in industrial workers living in ecologically unfavorable conditions of Urgench

Research objectives:

1. Study of the structure of dental morbidity of workers of industrial enterprises in Urgench.
2. Assessment of the dental status and need for different types of dental treatment of industrial

workers.

3. Assessment of risk factors for the development of dental diseases in industrial workers.
4. Determination of the doctor's labor costs for dental treatment of one employee.
5. Develop a program for the prevention of dental diseases in industrial workers

The object and subject of the study. The results of the study of the dental status of employees of industrial enterprises in Urgench will be studied.

Research methods.

The following research methods will be used:

- clinical and instrumental (X-ray examination of employees of enterprises);
- microbiological examination (bacteriological sowing of a smear from an inflammatory focus);
- statistical (the use of special computer programs for biomedical research, Spearman's rank correlation method, the development of a mathematical forecasting model).

At the end of the work, it is planned to develop and put into practice methodological recommendations, scientific articles will be published in scientific journals of the republic and abroad. It is planned to participate in congresses, conferences, seminars and other scientific forums with reports.

An application for a patent on mathematical modeling of forecasting the development of odontogenic diseases in workers, the deposit of scientific development will be issued, and a certificate for a computer program for the created scientific and innovative development will be obtained.

The results of the research will be introduced into the educational process of medical universities on the subject of maxillofacial surgery and dentistry.

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