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Ways To Improve The Organization Of Dental Services For Chemical Industry Workers

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ABSTRACT

In recent years, research has been carried out to study the problems of improving the organization of dental care for both the General population and individual categories of industrial workers^{4,6}.

However, to date not carried out in-depth studies on the problems of improvement of dental care to employees of the chemical industry in the new socio-economic conditions of development of industrial complex and reform of the health system, there is no comprehensive study of the current status of dental service medical-sanitary unit (MSCH) large enterprises, comparison of availability and quality of dental care to employees at the place of residence and place of work.

The purpose of this review is to study the dental morbidity of chemical workers, develop measures to improve their dental health and improve the quality of life.

At the present stage of development of the industrial complex of our country, a number of large enterprises have the opportunity to organize dental care for employees, primarily with harmful working conditions, at a higher level. At the same time, the implementation of the preventive orientation in dental care for the working population remains an unsolved problem^{2,3}.

The successful functioning of any medical service in modern conditions is possible only with the optimal interaction of all parts, all elements of the health system depends largely on the level of organization and management of medical institutions to optimize their work^{7,8}.

Keywords: Condition of the mucous membrane of the oral cavity, the hard tissues of teeth and paradontium, taste analyzer, unfavorable factors of production.

Material And Methods Of Research: It is planned to conduct a study of 120 workers of JSC "samarkandkime" - the main group, as well as 115 patients who applied to polyclinic No. 10 and are not related to the chemical industry - the control group.

The data that was received was subjected to statistical processing using the Microsoft Excel application package. The reliability of the difference in parameters was determined by the student's criterion.

Results and discussion.Currently, the issues of dental health for workers in various industries are relevant.

Various harmful factors of production can have a negative impact on human health, including on the tissues of the teeth, periodontal, oral and lip mucosa.

KEYWORDS

Condition of the mucous membrane of the oral cavity, the hard tissues of teeth and paradontium, taste analyzer, unfavorable factors of production.

INTRODUCTION

According to the literature, there is a higher level of dental diseases in employees of harmful industries.

One of the most numerous contingents exposed to the harmful effects of working environment factors are employees engaged in the production of mineral fertilizers, herbicides and pesticides. The intensity of the impact of factors of the working environment and the labor process causes a high risk of health disorders for employees in this sector of the economy.

According to numerous studies, employees of these enterprises are affected by a complex of factors of the working environment and the labor process: industrial noise, vibration, unfavorable microclimate parameters, air pollution of the working area with mine dust

and harmful substances, lack of natural lighting, as well as significant physical activity.

It is established that harmful working conditions have a negative impact on the health of workers engaged in the production of mineral fertilizers, herbicides and pesticides and cause them to outstrip the growth of diseases of the musculoskeletal and peripheral nervous systems, the cardiovascular system, the development of myocardial infarctions, brain strokes, and osteopenia.

Analysis of statistical records and log of newly detected occupational diseases of the UFA research Institute of occupational medicine and human ecology showed that 150 to 200 newly detected cases of occupational diseases are registered in the Republic of Belarus every year. The leading position is occupied by disorders of the musculoskeletal system (up to

48.9% of cases). In second place are diseases associated with the influence of physical factors-sensorineural hearing loss, vibration disease (up to 28% of cases). In third place (17%) are diseases caused by exposure to industrial aerosols. The fourth place is occupied by occupational allergic diseases.

During a comprehensive dental examination of workers in the production of organochlorine herbicides, a high intensity of dental caries was found (the CPI index in the main group was 12.7 ± 4.9 , in the control group 10.44 ± 0.72), associated by the authors with work experience and the degree of contact of workers with xenobiotics.

The average and severe degree of periodontal disease in workers with more than 20 years of work experience and in laboratory workers was almost twice as high as in the control group. Mild periodontal lesions prevailed in the first and second groups by experience. With increasing experience, the hygienic condition of the oral cavity worsens by almost 5 times and is estimated in the first group as unsatisfactory, and in the 2nd and 3rd as bad. There is also a direct relationship between the severity of diseases of the oral mucosa, the duration of exposure and the degree of contact of workers with chlorophenoxyherbicides.

There is a tendency to develop hyperkeratosis: cheilitis, hyperkeratosis of the red border of the lips, cheek and tongue mucosa, flat form of leukoplakia of the red border of the lips and cheek mucosa. The study revealed a decrease in the humoral component of immunity, due to a decrease in the level of lysozyme and SIgA.

Research data from recent years have shown that employees of enterprises of rubber and

rubber products, depending on the length of service, are dominated by more severe forms of periodontal tissue diseases. In the study of dental morbidity in glass workers, caries was detected in $98.3 \pm 1.0\%$ of workers in the main workshops, $59.5 \pm 7.6\%$ - in the control group. Chronic generalized periodontitis was diagnosed in 100% of cases, among which 31.4% of the examined patients were diagnosed with mild periodontitis, 34.7% with moderate periodontitis, and 33.9% with severe periodontitis. In 46.6% of employees, leukoplakia of the oral mucosa was detected, in the control group - 28.0%.

Terephthalic acid production workers were found to have dental hard tissue pathologies of carious and non-carious origin. The prevalence of periodontal diseases was 100%, most of the examined patients required qualified dental care. In addition, a high level of SOR diseases was detected, which has a statistically significant dependence on work experience and profession.

Analysis of the dental status of poultry farm workers revealed a high prevalence of pathologies of hard dental tissues, periodontal tissues and oral mucosa. From non-carious lesions of the oral cavity, pathological erasability and a wedge-shaped defect were diagnosed. When studying periodontal tissues, it was found that the number of people with intact periodontal disease decreased with increasing work experience. Allergic cheilitis, traumatic lesions of SOR, aphthous stomatitis, and hyperkeratosis foci were most often found among the diseases of SOR, which directly correlated with the experience of employees.

According to A. A. Agafonov (2012), caries occurs in 92.8% of cases in employees of thermal power plants, its complications – in

47.9%, periodontitis – in 11.1%, gingivitis - 20.4%, periodontal disease – in 6.5%, stomatitis – in 0.9%, wedge – shaped defect-in 6.7% of cases. With an increase in work experience in harmful production, the level of oral diseases increases. The highest rate of dental morbidity was found in workers of the boiler and turbine shop with 5-10 years of experience.

Also, relative to the control group, there is a low level of secretory immunoglobulin A in the oral fluid of employees (0.68 ± 0.55 g / l and 0.63 ± 0.06 g/l, respectively). In the main group, the concentration of saliva lysozyme was significantly higher than in the control group ($62.7 \pm 1.29\%$ and $52.7 \pm 0.67\%$, respectively). In the main group of workers, in contrast to the control group, the pH is shifted to the acidic side. As a result of the study, prevention measures were developed to improve working conditions and health indicators of employees.

A high prevalence of dental diseases was also diagnosed in employees of petrochemical production. The prevalence of pathological processes in periodontal tissues was 100 %, dental caries-99.1 %, and pathologies of the oral mucosa-58.7 %. The low hygienic level of the oral cavity was revealed. When studying the concentration of immunoglobulins sIgA, IgA, IgM, IgG, IgE and lysozyme in the oral fluid, it was found that all workers with periodontal disease have local humoral immunodeficiency.

According to the dental examination of workers in the production of mineral fertilizers, there is an increase in the prevalence and intensity of inflammatory diseases of periodontal tissues with an increase in the time of contact with xenobiotics. This files most often was discovered signs of bleeding gums and Tartar buildup.

Employees were found to have a higher level of COP diseases – $94.5 \pm 5.5\%$ (control group- $55.5 \pm 4.5\%$), among which there were such diseases as traumatic lesions of COP, chronic recurrent aphthous stomatitis, chronic herpetic stomatitis, meteorological cheilitis, desquamative and hyperkeratotic glossitis.. Also, in the group of employees of this production from 25 years and older, there are high values of the intensity of caries. Along with the high rates of sealed teeth, some researchers attribute this fact to the high frequency of tooth extraction due to pathological processes in periodontal tissues.

The impact of chemical and radiation production factors on male workers aged 55 to 64 years and with long work experience was studied by V. N. Olesova and others. Lesions of hard tissues of the teeth were found in 100% of cases. High values of the CPI index were diagnosed in employees of especially dangerous industries (18.4 ± 3.3). Most often, complete destruction of the crown part of the tooth was detected. The prevalence of diseases of the oral mucosa reached 27.4%, which is 2 times higher than the corresponding indicator in the control group.

The dependence of the prevalence and intensity of dental caries on the length of service was considered for employees of a gas processing plant. It was found that the overall prevalence of the carious process was 90.5%, the intensity- 10.05 ± 1.05 . Depending on the length of service, the values of these indicators increased. The prevalence of caries was 86.5%, the intensity of caries was 8.2 ± 0.69 for employees with 0 to 5 years of experience, and 96.0% and 16.7 ± 1.02 respectively for those with more than 15 years of experience.

Analysis of dental diseases in employees of aluminum industry enterprises in cases of disability over the past 5 years showed that the main share of disability certificates is caused by pathological processes of the oral cavity (58.65%). This fact confirms the need for planned sanitation of the oral cavity in industrial workers.

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