

A Conceptual Approach to the Prevention and Prediction of Dental Morbidity in Chemical Industry Workers

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Abstract:

Relevance. The question of the negative impact of some industries on the oral cavity remains relevant. The relationship between the high prevalence of non-carious lesions of the teeth and the oral mucosa with such production processes as oil and gas production, metallurgy, chemical production, bakery and confectionery production has been proved [1.3.5]. Dental health contributes to the preservation of the ability to work of an important part of the country's population - workers of industrial enterprises, especially since a number of studies convincingly reveal the role of the dental system in the general state of the body.

The presence of high risks of occupational diseases among workers in industry has been proven. This is due to the entry of compounds of elements into the human body through the oral cavity. Industrial workers are characterized by a high prevalence of dental caries and inflammatory periodontal disease [2.4.6].

Chemicals of the industrial air environment are detected in the oral fluid, hard tissues of teeth, dental deposits, biopsies of tissue structures. They aggravate the course of dental caries due to the substitution of calcium ions in hydroxyapatite crystals, chronic inflammation in periodontal tissues, violation of the integrity of the epithelium of the oral mucosa [3.5].

However, the influence of chemical factors of industry on the oral cavity of workers, the consequences of these effects have not been fully studied. Given this, the need to continue dental,

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clinical, functional and microbiological research on this problem has not lost its relevance.

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The purpose of the study. The aim is to develop prevention and improve the prediction of dental diseases based on the proposed conceptual approach in chemical industry workers.

To achieve this goal, the following tasks were set

- a methodology for the survey of chemical industry workers has been developed based on the general methodology proposed by WHO experts;
- determination of the dental status of chemical industry workers;
- identification of risk factors, negative effects on the hard and soft tissues of the oral cavity in chemical industry workers;
- assessment of the state of the oral cavity and determination of the level of dental morbidity among workers in comparison with the population not in contact with industrial harmful factors of the chemical industry;
- development of a conceptually new approach to primary and secondary prevention of dental diseases in chemical industry workers;
- development of preventive measures to prevent pre-pathological and pathological conditions of the oral cavity of workers.

The object of the study. The study will examine 4,150 chemical industry workers aged 25 to 60 years who have had direct contact with chemical elements for several years. All the surveyed will be divided into 3 groups: 1 - group - workshop workers, these are persons directly exposed to chemical elements; 2-group - locksmiths, plumbers, installers, cleaners, laboratory assistants, persons who rarely come into contact with chemical compounds; 3 - group – industrial administration, who have no contact with chemical elements.

The subject of the study will be saliva, a smear from the surfaces of the soft tissues of the oral mucosa, blood.

Research methods dental, clinical and functional, ecological and hygienic, microbiological, as well as statistical research methods will be used to solve the tasks and achieve the goals.

A methodology for the survey of chemical industry workers will be developed based on the general methodology proposed by WHO experts;

the dental status of chemical industry workers will be determined;

the risk factor of negative impact on the hard and soft tissues of the oral cavity in chemical industry workers will be identified;

the condition of the oral cavity will be assessed and the level of dental morbidity among workers in comparison with the population who are not in contact with industrial harmful factors of the chemical industry will be determined;

a conceptual new approach to primary and secondary prevention of dental diseases in chemical industry workers will be developed;

preventive measures will be developed to prevent pre-pathological and pathological conditions of the oral cavity of workers.

Epidemiological dental examination of workers with harmful chemical working conditions showed that the intensity of the carious process, the prevalence of periodontal diseases, pathological erasability, dentin hypersensitivity, the predominance of precancerous diseases among the diseases of the SOPR, the low level of oral hygiene is higher compared to the



residents of the city. The high level of dental morbidity is due to the presence of harmful factors of chemical production, the lack of planned sanitation of the oral cavity, an effective system of prevention and medical examination at industrial enterprises [7.8].

The structure of dental morbidity is caused by the presence of harmful production factors, depends on age, gender and work experience at the enterprise. At all three chemical production enterprises, with increasing work experience, the intensity of the carious process decreases, the number of teeth removed increases; the number of people with precancerous diseases of the SOPR and periodontal diseases increases. SOPR diseases at the early stages of diagnosis do not always have pronounced clinical symptoms, but are characterized by obvious pathological changes in the epithelium, confirmed morphologically [9.10].

On the example of the chemical industry, the causes of a higher intensity of dental diseases in workers exposed to harmful production factors characteristic of chemical industry enterprises will be identified;

a step-by-step method of primary and secondary prevention of dental diseases in chemical industry workers will be developed and recommended for dental practice;

indicators of the need for dental treatment among workers of harmful production factors will be determined, and the volume of necessary complex treatment among workers of the chemical industry will be calculated.

The results obtained are planned to be included in the medical practice of institutions conducting experimental research, as a methodological recommendation, a patent for an invention, scientific and innovative work. Monitoring of dental morbidity of workers of chemical enterprises, identification of harmful environmental factors and chemical production, reorganization of the dental care system, introduction of dental hygienist positions in the staffing of the dental service of medical units of chemical plants, timely dispensary observation, annual screening of the condition of the mucous membrane of the cavity for oncopathology, prevention of dental diseases and active sanitary and educational work and systematic promotion of a healthy lifestyle.

CONCLUSIONS: In order to carry out planned prevention of dental diseases, increase the level of individual oral hygiene of workers, it is necessary to reorganize dental services of harmful industries and include dental hygienists in their structure. In order to reduce the prevalence and intensity of major dental diseases and improve the hygienic condition of the oral cavity in workers of chemical enterprises, it is necessary to carry out preventive measures, including dental education, brushing teeth with multicomponent therapeutic and preventive toothpastes, promotion of a healthy lifestyle.

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