

Scottish International Conference on Multidisciplinary Research and Innovation – SICMRI 2025

PERIODONTAL STATUS IN METALWORKING WORKERS

Khatamova Madinakhon Anvarovna

2nd year student of basic doctoral studies Samarkand

State Medical University, Samarkand, Uzbekistan.

Yakubova Muhayyo Abduhakim qizi

1st year resident in therapeutic dentistry

Samarkand State Medical University, Samarkand, Uzbekistan.

Periodontal diseases occupy one of the leading positions in the structure of dental pathology among the adult population and represent a serious medical and social problem. Of particular importance in the development of inflammatory and destructive periodontal diseases are occupational hazards to which industrial workers are exposed, including those employed in the metalworking industry.

During their professional activities, metalworking workers are exposed to a complex of adverse factors, including metallic dust, aerosols of heavy metals, vibration, noise, high temperatures, chemical substances (coolants and lubricants, oils), as well as unfavorable microclimatic conditions. Prolonged and systematic exposure to these factors can lead to the development of general somatic and dental diseases, including periodontal pathology.

One of the leading etiological factors in periodontal tissue damage among metalworking industry workers is exposure to metallic dust and toxic compounds. Metal particles entering the oral cavity settle on the surfaces of teeth and the oral mucosa, contributing to the formation of dental plaque and calculus. This creates favorable conditions for the proliferation of pathogenic microflora, which plays a key role in the development of gingivitis and periodontitis.

In addition, heavy metals can exert a toxic effect on periodontal tissues by disrupting microcirculation, increasing vascular wall permeability, and altering metabolic processes. Chronic intoxication may lead to a decrease in local immunity, suppression of protective mechanisms in the oral cavity, and a slowdown of regenerative processes. As a result, the inflammatory process becomes prolonged and progressive.

Vibrational exposure and physical overstrain also play an important role in the development of periodontal diseases among metalworking workers. Vibration negatively affects the vascular system, causing capillary spasm and deterioration of blood supply to periodontal tissues. Impaired trophic support leads to tissue hypoxia, which contributes to the intensification of destructive processes in the alveolar bone and periodontal ligament.

The influence of harmful working conditions on the general health status should also be taken into account. Chronic gastrointestinal diseases, endocrine disorders, and cardiovascular diseases, which are more common among industrial workers, can aggravate the course of periodontal diseases. General somatic pathology reduces the body's resistance and promotes the generalization of inflammatory processes in periodontal tissues.

The clinical presentation of periodontal diseases in metalworking workers is characterized by a high prevalence of chronic generalized gingivitis and moderate to severe periodontitis. The most common complaints include gingival bleeding, halitosis, pain during food intake, and tooth

Scottish International Conference on Multidisciplinary Research and Innovation – SICMRI 2025

mobility. Objectively, gingival hyperemia and edema, abundant dental deposits, periodontal pockets, and signs of alveolar bone resorption are observed.

Prevention of periodontal diseases among metalworking industry workers should be comprehensive and include both individual and workplace-related measures. Regular preventive dental examinations, professional oral hygiene, education of workers on proper individual oral hygiene practices, and the use of personal protective equipment in the workplace are of particular importance. Reducing exposure to harmful occupational factors and early detection of dental pathology make it possible to prevent the development of severe forms of periodontal diseases and improve the quality of life of workers.