МЕДИЦИНА, ПЕДАГОГИКА И ТЕХНОЛОГИЯ: ТЕОРИЯ И ПРАКТИКА
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OCCUPATIONAL DISEASES ASSOCIATED WITH CHANGES IN THE AMOUNT OF INORGANIC LEAD

Toshbulova Muxlisa Abduraxmonovna
toshbulovamuxlisa336@gmail.com
Isayeva Zulayho Farxod qizi
Zulayhoisayeca@gmail.com
Mamadoliev Ikromjon Ilkhomidinovich
Kimyo International University in Tashkent. Samarkand, Uzbekistan
Email: ikromjon.mamadoliev@mail.ru

Abstract. At the 124th Conference of the World Health Organization in 1964, the first list of occupational diseases was adopted, and this list included generally accepted traditional occupational diseases that develop under the influence of widespread harmful factors. In 1980, this list was revised at the 66th World Conference. Currently, 25 countries that are members of the World Health Organization have revised and ratified the specified convention. On May 22, 1990, the European Commission adopted Recommendation 90/326/EU and approved the list of occupational diseases. However, there is still no generally accepted and unified classification of occupational diseases. Each country that is a member of the World Health Organization approves its own list of occupational diseases and determines measures for their prevention and social protection of patients.

Keywords: pneumoconiosis, silicosis, siderosilicosis, anthracosilicosis, occupational diseases, lead, pathogenetic intoxication, silicon dioxide in silicosis

Dolzarbligi: Relevance: The influence of adverse factors of the production environment or labor process is of decisive importance in the development of occupational diseases. The clinical picture of most occupational diseases does not have specific specific signs, therefore, accurate information about the working conditions of a sick person helps to determine the etiological role of an occupational factor in the development of the disease. Occupational diseases are the result of the impact of one or another occupational and production harmful factor on the human body (for example, silicon dioxide dust in silicosis, toxic substances in industry in poisoning, etc.). Along with this, there are diseases that can develop under the influence of occupational and other environmental factors. In the first case, they are occupational

(for example, bronchial asthma in chemical industry workers), and in the second, they are general (for example, bronchial asthma developed from exposure to house dust) diseases. The list of occupational diseases in force in the Republic of Uzbekistan is based on the etiological principle, approved by a special order of the Ministry of Health and includes more than 100 diseases.

Research materials and methods: Occupational diseases are divided into 5 groups according to etiology: 1. Diseases developed from the influence of chemical factors: acute and chronic poisonings and their complications, skin diseases (contact dermatitis, photodermatitis, toxic melanoderma, etc. (Fig. 1). 2. Diseases developed from the influence of industrial aerosols: pneumoconiosis, silicosis, siderosilicosis, anthracosilicosis, asbestosis, carboconiosis, dusty bronchitis, etc. (Fig. 2). 3. Diseases developed from the influence of physical factors: vibration disease, electroophthalmia, cataract, cochlear neuritis, light sickness, etc. 4. Physical stress. Diseases associated with the strain of organs and systems: coordinator neuroses, diseases of the peripheral nervous system, cervical and lumbar radiculopathies, shoulder epicondylitis, etc. Uterine prolapse, varicose veins of the legs, vocal cords diseases caused by stress (sacral laryngitis), etc. 5. Diseases developed under the influence of biological factors: infectious and parasitic diseases - tuberculosis, brucellosis, viral hepatitis, dysbacteriosis, cutaneous candidiasis, visceral candidiasis, etc.

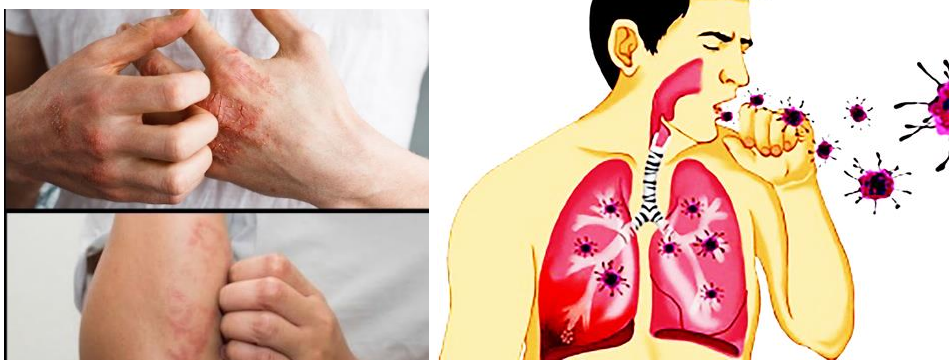

Figure 1-2. Skin and pulmonary tuberculosis (contact dermatitis, photodermatitis, pneumoconiosis).

Research results: Lead and its inorganic compounds are one of the most widely used metals in industry. They are used in mechanical engineering, equipment manufacturing, radio electronics (lead welding), battery and cable production, typography (manual or linotype typing), smelting non-ferrous and ferrous metals, porcelain, ceramics and crystal, lead paints, and other industries. The following

inorganic solutions of lead are used in industry: lead oxide (PbO), lead chromate (PbCrO4), lead galena (PbS), lead chloride (PbCl,), etc. In industrial sectors where lead is used, the main exposure is to fine particles of lead oxide, which are formed as a result of the condensation and oxidation of lead vapors in the air. In industrial sectors, lead affects the body mainly by inhalation. Lead can also enter the body through the skin and gastrointestinal tract. If the workers' diet is low in calcium, iron, and protein, the absorption of lead through the gastrointestinal tract increases. Lead and its compounds that enter the respiratory tract are absorbed directly into the blood and undergo a number of changes in the body. In the stomach, the soluble compound in the presence of hydrochloric acid turns into lead chloride. In the alkaline environment of the intestine, lead and its compounds, with the help of fatty acids, form fatty salts of lead. This, in turn, is emulsified with the help of bile. Small particles of lead are absorbed by the mucous membranes of the intestine, and then enter the general bloodstream through the capillaries of the portal vein and the lymphatic channels of the intestine. Lead, which has reached the liver, is absorbed by liver cells and gradually excreted with bile. Lead circulates in the blood in a highly dispersed state as colloidal lead phosphates and albuminates, which, in turn, are formed as a result of the interaction of inorganic lead phosphates with sulfur-binding proteins of erythrocytes and blood plasma. These substances accumulate in many organs in the form of insoluble tribasic lead phosphate. Lead belongs to the category of poisons with cumulative effects. A significant part of lead accumulates in the trabeculae of bones, which is explained by the fact that lead displaces calcium salts from bone tissue. In addition, lead has the property of accumulating in muscles, liver and kidneys, erythrocytes. A small part of them accumulates in the spleen, brain, myocardium and lymph nodes. Usually, lead is released from the depot gradually, sometimes even for several years after the cessation of work with lead. Certain exogenous and endogenous factors (alcohol, intercurrent diseases, injuries, physiotherapeutic procedures, nutritional disorders, acid-base imbalance, etc.) Pathogenesis of lead poisoning. The fact that lead is included in the category of toxic substances with polytropic effects indicates that its pathogenetic mechanism is multifaceted. The leading place among them is occupied by the violation of porphyrin and heme biosynthesis. It should be emphasized that among all industrial poisons that lead to the violation of porphyrin and heme synthesis, lead occupies a special place. Under the influence of lead, porphyrin and heme synthesis is of primary nature and is the key to the pathogenetic mechanism of intoxication. We know that

porphyrin biosynthesis is one of the universal biological processes, that is, porphyrin, together with metals, in complex form (metalloporphyrin), forms the basis of hemoglobin and myoglobin, as well as energy-generating enzymes important for life (cytochromes B and C, cytochrome oxidase, catalase, peroxidase).

Conclusion. Prevention of lead poisoning is the implementation of technical, sanitary-hygienic, personal hygiene measures and preventive measures. These include replacing lead and its compounds with less toxic substances, mechanization and hermeticization of the production process, rational ventilation, mechanical cleaning of rooms, etc. Personal hygiene measures are of great importance, such as the use of respirators, special clothing, washing hands in weak solutions of acetic acid. Among the preventive measures, it is recommended to treat workers who come into contact with lead with vitamins, take vitamin C at least 2 times a year and daily for 1 month, and drink pectin-containing drinks (apple, plum and other juices).

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