

ASSESSMENT OF APOSTIERIAL PROFESSIONAL RISK FOR EMPLOYEES OF METALLURGICAL MANUFACTURERS EMPLOYED IN HAZARDOUS LABOR CONDITIONS

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Introduction:

The current issue of labor medicine at the present stage of its development is the evaluation of risk factors in the production, assessment of the degree of connection between their levels with health disorders, the allocation of professionally conditioned forms of disease for the further development of measures for the preservation of health [1, 2].

The formation of a system for analyzing the occupational risks in industrial enterprises is a complex of interrelated activities, which include measures to identify, assess and reduce occupational risks. Particular attention is paid to the assessment of risks, which is an initial stage in the definition of priority approaches to the management of safety and health protection of workers [3].

The aim of the study:

To assess the professional risk for workers of metallurgical industry employed in hazardous working conditions.

Materials and method of research:

The following indicators were calculated for the estimation of occupational risk, according to the data of the incidence of temporary disability: the level of

morbidity of workers (R), relative risk (RR), attributive risk (AR) in absolute values and percentages (ARe,%).Indicators were calculated for employees of the sinter workshop, where the working conditions in the workplace correspond to grade 3 of 4 hazard grades. The employees of the department of plant management who did not work in hazardous and insecure working conditions (class 2 – admissible), were used as a control group.

The evaluation of the cause-effect connection between the factor and the development of morbidity was carried out on calculated indicators of relative risk [4].

Obtain results: As a result of the assessment of the health risk of workers in the sinter workshop, it was found that the highest risk levels and statistically significantly higher frequency than in the control group, was among the following nosological forms: respiratory diseases, diseases of the nervous system, diseases of the bone and muscular system (Fig. 1).

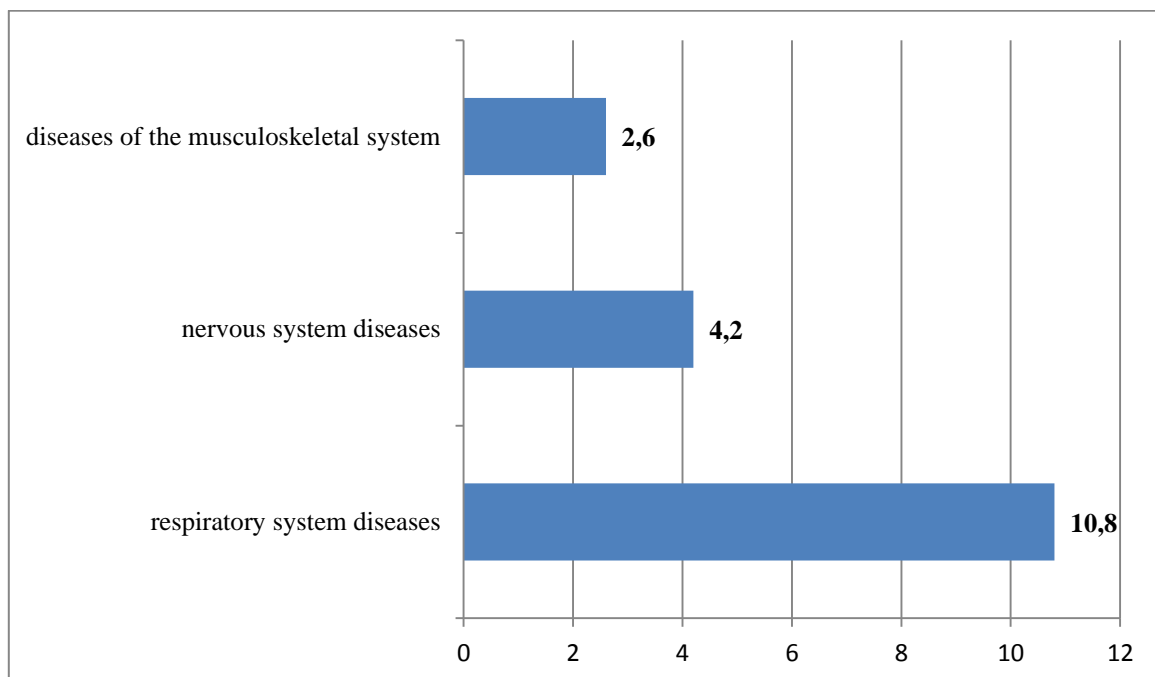


Fig. 1. Relative risk (RR) of disease development among workers of sinter workshop

The level of respiratory diseases in the sinter workshop was 8,4 per 1000 workers, in the control group – 0,8 per 1000 workers. Relative risk for the disease was $RR=10,8$ at $CI\ 95\ \% \ 9,1-13,7$, which has an almost complete degree of connection with work and relates respiratory diseases to professional conditions. The

share of diseases caused by working conditions among the workers of the sinter workshop was 90,1 % (CI 95 %; 60,9–94,03 %), among the population in general 68 % (CI 95 %; 67,4–69,7 %)

The level of workers illnesses of the nervous system of the workshop was 19,6 per 1000 workers, in the control group – 4,7 per 1000 workers. Relative risk for diseases of the nervous system was $RR = 4,2$ at CI 95 % 2,1–6,3, which has a very high degree of conditioning and relates this disease to production-determined. The share of diseases caused by working conditions among the workers of the sinter workshop was 76,2 % (CI 95 %; 29,1–91,9 %), among the population in general 41 % (CI 95 %; 39,8–42,2 %) (Fig. 2).

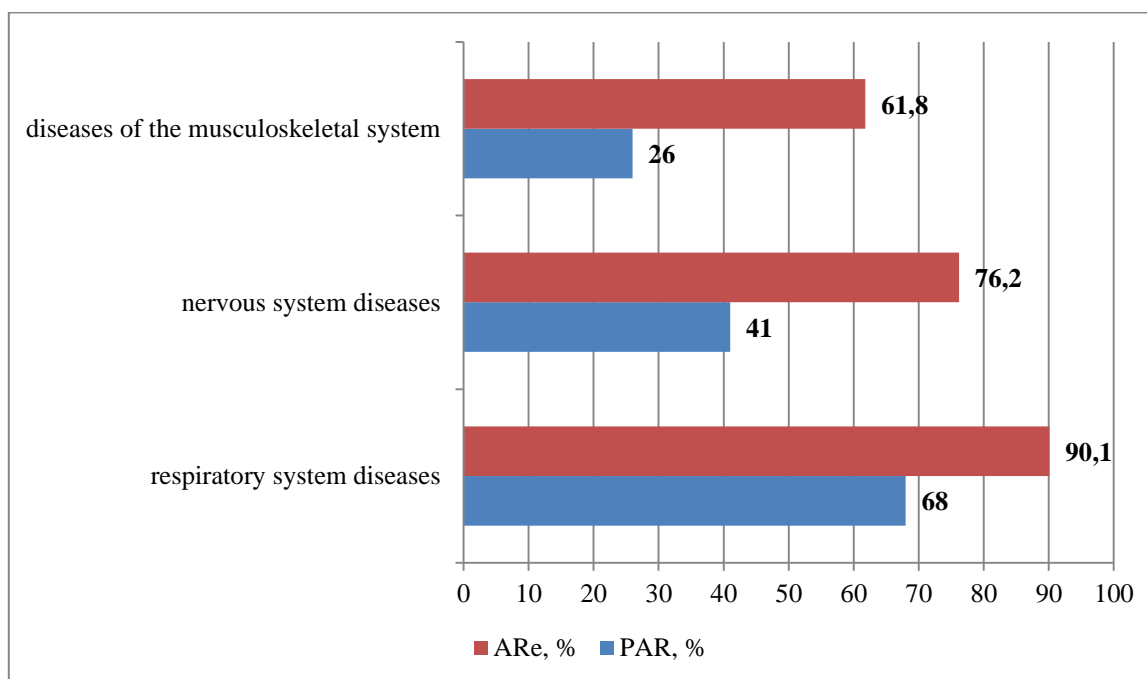


Fig. 2. The share of diseases caused by working conditions among the workers of the sinter workshop (ARe,%) and the population in general (PAR,%).

The level of the diseases of the bone and muscle system in the workers of the sinter workshop (112,04 per 1000 workers) exceeded the corresponding indicator in the control group by 2,7 times (42,8 per 1000 workers). Relative risk for the disease was $RR = 2,6$ at CI 95% 1,74–3,93, which has a high degree of connection with the working conditions and relates the diseases of the musculoskeletal system to the production-conditioned. The share of diseases caused by working conditions among

workers of the sinter workshop (ARe,%) significantly exceeded the share of population in general (PAR,%) – 61,8 % (CI 95 %; 42,5–74,6 %) and 26 % (CI; 95 % 24,6–27,6 %) respectively.

Conclusions:

1. Occupational risk was assessed, based on the data of the incidence of temporary disability, indicates an almost complete, very high and high degree of professional conditionality of diseases with working conditions.

The share of illnesses among workers working in harmful working conditions is much higher (61,8и%–90,1 %) compared with the control group (26 %–68 %), which confirms the influence of industrial factors on the health of workers in harmful working conditions.

2. The established statistically significant links between the impact of harmful production factors and workers' health disorders confirm the need to develop an effective system of preventive measures to reduce not only the professional, but also production-related morbidity in industrial enterprises with harmful working conditions.

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