PECULIARITIES OF GENERAL MORBIDITY AMONG RAILWAY CONDUCTORS

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ABSTRACT — An analysis of the incidence of incidence of occupational diseases among railway conductors has allowed to assess the effects of external adverse production factors on the health of this category of workers, the effect of production factors on health, in order to form effective prevention strategies.

KEYWORDS — morbidity, conductors of railway transport, unfavorable production factors, length of service.

Purpose of work

Identification of the specific features of the incidence of railway conductors.

The tasks

included the analysis and assessment of the incidence of railway conductors, the determinants of morbidity. In the work nonparametric statistics methods were used.

Results of the study

21.6 ± 1.95% of women had no chronic somatic pathology, and 78.4 ± 1.95% of conductors had chronic somatic pathology. According to the frequency of registration, the first ranked place was occupied by diseases of the digestive system 31.3 ± 2.22%, the second place — diseases of the musculoskeletal system 17.5 ± 1.82%, the third place — respiratory diseases — 9.9 ± 1.43%, the fourth place — diseases of the cardiovascular system — 8.1 ± 1.3%, the fifth — diseases of the kidneys and urinary tracts 6.7 ± 1.19%, and the sixth — other diseases — 5.1 ± 1.05%.

In conductors among diseases of the digestive system, chronic gastroduodenitis — 228‰, ulcer disease of the stomach and duodenum — 44‰, more rarely chronic cholecystitis — 37‰ were most often recorded. Given the classic risk factors for the diseases of this group (irregular nutrition and its inferiority), it can be argued that there is an important role of preventing diseases of the digestive tract among conductors who have been working on trips for a long time. Dementia-degenerative lesions of the joints — 85‰, chronic dystrophic polyarthritis — 59‰, and deforming spondylosis — 29‰ prevailed for diseases of the musculoskeletal system of female workers. In the class of diseases of the cardiovascular system, neurocirculatory dystonia — 151‰ and hypertensive disease — 30‰, were noted. For diseases of the respiratory system — chronic tonsillitis — 51‰ and chronic laryngitis — 25‰ with chronic bronchitis — 23‰. High enough among the conductors was the frequency of varicose veins of the lower limbs — 85‰, which could be a consequence of the combined action of overloads, vibration and a significant static load. Among the diseases of the kidneys and urinary system, the first place was occupied by chronic pyelonephritis — 230‰, cystitis — 25‰, urolithiasis — 18‰.Correlation analysis made it possible to reveal a direct relationship with a sufficient level of significance between the frequency of registration of pathology (according to the data of referral to outpatient facilities) and the length of service as a conductor ($r = 0.58$, with a difference from zero greater than 95%, $p < 0.05$). An analysis was made of the incidence rate for the groups of workers. In total, four different groups were distinguished: up to 3 years, from 3 to 6 years, from 7 to 10 years and more than 10 years. The first trainee group (experience up to 3 years) was considered as a control in relation to others, taking into account a short period for the implementation of occupational risk factors. The incidence rate characteristic of the first trainee group was taken as a *zero level*, since it was practically independent of the working conditions, but was a consequence of the risk factors that existed before the beginning of labor activity.

As a result of the analysis it is established that in the first group (up to 3 years) first place among chronic somatic pathology was won by diseases of digestive organs of — 158‰, the second place — the diseases of kidneys and urinary tract registered at every third conductor — 118‰, the third place — diseases of respiratory organs — 93‰, the fourth place — violation of fatty exchange — 65‰, the fifth place — blood circulatory system diseases — 57‰, the sixth place of a disease of the musculoskeletal device — 39‰. The overall level of chronic morbidity was 526‰, which is significantly lower than the statistical data on the population, however, taking into account the age of the contingent of the study group, the difference is not very significant. In the next trainee group of conductors (from 3 to 6 years), occupational risk factors already prevailed over general population. The

first ranked place, as well as in the group up to 3 years, belonged to the group of diseases of the digestive tract 330‰, but the incidence rate increased more than 2 times (p <0,05). The group of endocrine diseases (violation of fatty exchange) — 155‰ moved to the second rank place from the fourth. For this group, there was also a twofold increase in the incidence rate (p <0.05).The third ranking place was preserved for a group of respiratory diseases — 145‰. The increase in the frequency of registration was 2.23 times (p <0.05). The ranked place decreased from the second to the fourth for a group of kidney and urinary tract diseases — 116‰ (the differences are not reliable, p> 0.05).The frequency of detection of diseases of the musculoskeletal system has significantly increased (in 2.7 times from 39‰ to 106‰, p <0.05) — the fifth ranked place. The sixth ranked place in this trainee group is circulatory system diseases — 87‰.In the third group of trainees (from 7 to 10 years), the first ranked place was preserved for a group of diseases of the digestive system. The incidence rate has increased, but not significantly (from 330‰ to 391‰). On the second ranked place, moving from the third — the disease of the respiratory system. With respect to this group, the most significant increase in the incidence rate was observed from 145‰ to 246‰ (p <0.05).The growth of structural significance of diseases of the musculoskeletal system continued from the fifth to the third place. Increase in the incidence rate more than 2 times from 106‰ to 210‰ (p <0,05). The structural significance of the second to fourth violations of fat metabolism decreased due to a moderate increase in the registration of this type of pathology (from 155‰ to 196‰) against a background of more pronounced increase in the level of registration of other groups of diseases. The structural importance (growth from the sixth to the fifth place) of the group of diseases of the organs of blood circulation increased slightly (from 87‰ to 152‰). The decrease in structural significance from the fourth to the sixth group of kidney and urinary tract diseases — 137‰ continued (the differences were not significant, p>0 0.05).A group of respiratory diseases moved to the first ranked place in the fourth group of patients (more than 10 years), having outstripped the group of diseases of the digestive organs due to a more significant increase in the incidence rate of respiratory diseases and the absence of an increase in the incidence rate (even some reduction) in respect of diseases of the digestive system. The third ranked locus of the locomotor system was preserved. The group of circulatory system diseases moved from the fifth to the fourth place. Closed ranked list of structural significance of the group of diseases of the genitourinary system and violations of fat metabolism. The analysis of the dynamics of somatic incidence rates showed a practically linear increase in the incidence rates with an increase in the work experience of the conductors, except for a group of diseases of the digestive organs, against which there is a decrease in the morbidity rate with experience of more than 10 years. High somatic diseases of the digestive organs in the conductors is understandable and productive due to the fact that their nutrition can be considered inadequate, irrational and unbalanced. The incidence of diseases of the musculoskeletal system was quite high, which could be a consequence of the combined effect of overloads and work in an upright position. Consequently, external environmental influences and professional factors are of great importance for persons whose work activity is associated with a significant psychoemotional load, in part by noise and vibration, in which conductors work. For conductors of railway transport, with a critical period of professional activity, when the negative consequences of labor activity begin to appear, you can consider the experience of more than 3 years. With the increase in length of service, the severity of negative consequences increases, which requires the development of a set of preventive measures aimed at reducing the negative consequences of occupational risk factors. Thus, the analysis of the structure and levels of the spread of chronic somatic pathology among railway conductors has shown the presence of a direct link between work experience and the frequency of pathology registration.

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