

14. CARDIO-VASCULAR DISEASES AND TRAFFIC SAFETY

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To guarantee safety in traffic is an urgent problem indeed, and its eventual solution is most likely dependent on optimal functioning of "Driver - Vehicle - Environment" system.

In our republic, as well as in Russia as a whole, traffic accidents are unfortunately frequent, taking away many lives and leading to rather considerable economic losses.

Frequencies expressed in absolute figures characterizing traffic accidents (TA) show the number of those injured and killed, besides there are indices of casualties and fatalities in children - the total of TA, those injured and killed from 1986 to 1992 - the total numbers in adults and children reach 250 000 injured and 45 - 50 000 killed annually on the highways of Russia resulting in 3 billion roubles.

We report growth of TA in Kabardino-Balkarian republic from 1986 to 1992, 996 up to 1335. the number of killed 191 to 286, injured 1104 to 1335. Recordings have been made comprising 130 TA with children in the result of which about 30 Teenagers were killed and 120 were injured. Unfortunately, our data leave little hope for any decrease of TA, confirming the topicality of some effective prophylactic measures.

About 70-90% of the total TA occur through the fault of the traffic drivers (TD). Drivers' fitness and safety in work depend primarily on their personal psychophysiological features, state of their health, drinking habits and use of some medicine drugs.

Within National programmes for the recent 10 years we carried out epidemiological researches of 4500 workers of urban transport enterprises and of more than 1300 workers of rural enterprises.

Among other risk factors arterial hypertension (AH) was found in 22.6% of cases. It is worthy of noticing that in men having AH only 34% of the total were aware of the disease. Of those aware, only 7.1% got some medical care, and only 0.9% received full medical service. Another risk factor of coronary heart disease (CHD) - use or abuse of alcohol - observed in 87.6%, smoking in 74%, psychoemotional overstrain 75.4%, lack of exercise 36%, and excessive mass of weight 19%.

To reveal the spread of CHD and its main risk factors we made the first attempt in Russia in following up 1343 TD aged 20-59. In 370 TD (random choice) levels of Plasma total cholesterol (TC), triglycerides (TG) and lipoproteins of high density (HDL) were determined. The whole investigation was based on the results of some previous researches.

CHD (all its forms) determined with Rose questionnaire and ECG were found in 7.1% of the total. Metabolism disturbances in drivers were observed rather often. Thus, hypercholesterolaemia (TC no less than 250 mg/dL) was found in 15.8% in younger age, and 34.8% in older one; hyperglyceridaemia (TG no less than 200 mg/dL) - 7.9 and 19.9%, respectively. Levels of antiatherogenous HDL (35 mg/dL and less than that) were found in 8.4 and 9.2% of younger and older men, correspondingly.

Psychophysiological follow-up of TD having CHD, AH and cardiac arrhythmia displayed a notable decrease of their performing fitness and consequently of their reliability. Thus, we observed low rates of visual reaction speed (in sec.) in the test group when compared with the control group (healthy drivers) - respectively, 0.820 ± 0.04 and 0.776 ± 0.13 ($p 0.01$); indices of moving object monitoring (in mm.) were worse in the test group (6.91 ± 1.08) than those in the control group (6.12 ± 0.34). The situation was the same with the complex reaction (in sec.) - (0.246 ± 0.01 and 0.210 ± 0.01). These discrepancies proved statistically relevant ($p 0.05$). Our data confirm actual dependence of TA on cardio-vascular diseases. Besides, the analyses of medical records of 204 TD whose faults led to TA, showed the dependence of TA rates on the presence of cardio-vascular diseases.

The data obtained so far allow us to warn against a highrise of AH, DHC and their risk factors in TD of Russia. Presence of cardio-vascular diseases deteriorates psychophysiological fitness, TA being frequenter hitherto. These data may prove somehow important and useful in dealing with questions of occupational fitness and selection, medical care of TC, determination of prophylactic measures against TA and for the improvement of traffic safety.

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