

ASSOCIATION OF CHANGE IN THE TYPE OF JOB WITH PREVALENCE OF COMPONENTS OF THE METABOLIC SYNDROME—SPECIAL REFERENCE TO JOB STRESS

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Objective It is well established that job stress is a leading cause of cardiovascular disease. The relationship with the metabolic syndrome, however, has received only limited attention. The present study was designed to investigate associations between change of the type of job and the prevalence of metabolic syndrome components from the aspect of on-the-job stress and alteration in life style.

Methods Thirty-six male workers of the manufacturing department were transferred to the car-sales department at the same automobile company in 1992 to 1993. These same workers were transferred back to the manufacturing department after two years. We compared the first health-check data before the transfer in 1992 (Term A), a second set of data two years after transfer in 1994~95 (Term B) and a third set of data two years following transfer back to the manufacturing department in 1996~1998 (Term C). The workers were requested to provide information about drinking and smoking habits, and answer Karasek's questionnaire and a simple stress questionnaire in order to clarify the possibility of job stress in occurrence of the metabolic syndrome, defined in terms of obesity, hypertension, dyslipidemia, and impaired glucose tolerance as components.

Results Five workers had two or more components of the metabolic syndrome before the transfer to the car-sales department (Group I). One demonstrated improvement, three no change, and one increase in symptoms from A to B. Seven workers had more than two components after the transfer to car-sales department (Group II), and six of them exhibited decrease two years following transfer back to the manufacturing department. Five of them also showed elevated liver enzymes in serum with the appearance of the components, and three of them demonstrated recover. Three workers had two components of the metabolic syndrome only at time point C (Group III), while the remaining 21 workers had 0 to one component throughout the observation period (Group IV). Amount of drinking and smoking increased significantly when working in the sales department but these items returned to the previous values after rejoining manufacturing, though differences were not observed between workers with (Group II) and without (Group IV) components of the metabolic syndrome. Body mass index (BMI) and alanine aminotransferase (ALT) increased significantly when workers moved to the sales department and that was significant in Group II as compared to Group IV. Three components of Karasek's JCQ changed significantly during job transfer, though differences were not observed between the workers with (Group II) and without (Group IV) components of the metabolic syndrome. Logistic regression analysis with age, lifestyle, Karasek's JCQ, and ALT revealed that elevation of ALT value was associated with having two or more components of metabolic syndrome, while hours of sleep demonstrated an inverse association.

Conclusion Elevated ALT and reduction of sleep hours may be associated with development of the metabolic syndrome in workers who change their type of job.

Key words : metabolic syndrome, stress, Karasek's JCQ, changing types of job, alanine aminotransferase

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