Objective To study the interactive effect of job stress and genetic susceptibility (or gene polymorphism) on hypertension. Methods A cross-sectional epidemiological study was conducted in 452 workers from a thermal power plant in China. Extrinsic effort, occupational reward, and over-commitment were measured. Hypertensive patients were defined by three phases of screening, reexamination, and final diagnosis. \( \beta_2 \)-AR genotypes and allele frequencies at amino acid positions 16 (\( \beta_2 \)-AR-16: Arg\( \rightarrow \)Gly) and 27 (\( \beta_2 \)-AR-27: Glu\( \rightarrow \)Glu) were identified by PCR-RFLP. Results Job stress was related with the prevalence of hypertension in males (\( P<0.05 \)), whereas no significant relationship was found in females (\( P>0.05 \)). Differences in genotypes and allele frequencies of the \( \beta_2 \)-AR-16 were statistically significant between the hypertension and control groups (\( P<0.05 \)), whereas those of \( \beta_2 \)-AR-27 were not (\( P>0.05 \)). The prevalence of hypertension was higher in individuals carrying Gly16 allele than in those carrying Arg16 allele of the high job stress group (\( P<0.01 \) or 0.05). Conclusion High job stress and polymorphism of \( \beta_2 \)-AR-16 have an interactive effect on the prevalence of hypertension in male workers.

Key words: Job stress; Hypertension; \( \beta_2 \)-AR; Gene polymorphism

REFERENCES


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