Association between Polymorphisms of ACE;B2AR;ANP;ENOS and Cardiovascular diseases: a Community Based study in Matsu area

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摘要

Abstract

Background: Cardiovascular diseases (CVDs) are the leading cause of death in most countries of the world. In this study, associations between CVDs and polymorphisms of angiotensin-converting enzyme (ACE), atrial natriuretic peptide (ANP), ?2-adrenal receptor (B2AR) and endothelial nitric oxide synthase (ENOS) genes were explored in a community-based setting.

Methods: Between March and May 2001, 1740 subjects ?35 years from the Matsu area in Taiwan were recruited to this study, representing 71.6% of the target population in Matsu. After informed consent was obtained during an interview, physical examination, resting ECG, serum biochemical profile and a questionnaire survey were used to obtain information. Genomic DNA was also collected and analyzed. Owing to technical limitations, 1186 samples were analyzed. Genetic polymorphisms of the genes in question were investigated using PCR and restriction fragment length polymorphism (RFLP). The distribution of allele frequencies for these genes was derived for stroke, coronary artery disease, hypertension, diabetes, hypercholesterolemia, hypertriglyceridemia and overweight subgroups.

Results: The ENOS Glu298Asp polymorphism was associated with hypercholesterolemia (odds ratio 0.658, 95%CI 0.460−0.940; p=0.025) and the ACE D/I variant was associated with hypertriglyceridemia (odds ratio 0.722, 95%CI 0.536−0.973; p=0.033). Polymorphisms of the other genes were not associated with any of the disease groups.

Conclusions: This community-based study reveals that genetic factors might play a role in the metabolism of lipids. The genetic risk for CVDs needs further investigation.

Clin Chem Lab Med 2007;45:20–5.

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