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LACK OF ASSOCIATION BETWEEN GENETIC POLYMORPHISMS AFFECTING AUTONOMIC ACTIVITY AND CORONARY ARTERY SPASM

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Objectives Autonomic activity appears to play an important role in controlling the vasomotor tone and, thus, may be associated with coronary artery spasm (CAS).We investigated the association of the common functional polymorphisms affecting autonomic activity and CAS. The candidates were α_{2B}Del301-303, α_{2C}Del322-325, β_2Gln27Glu and *GNB3* C825T polymorphisms.

Methods One hundred and nine patients with CAS, confirmed by coronary angiography with or without acetylcholine provocation test, and ninety-four apparently healthy control subjects were investigated for genotype of the 4 polymorphisms and established risk factors of ischemic heart disease.

Results The minor alleles were α_{2B}Del301-303, α_{2C}Del322-325, β_2Glu27 and *GNB3 C825* and their frequencies were 48.4%, 13.3%, 13.3%, and 46.8%, respectively, in the control subjects of this Chinese population, which were different from those of other ethnic groups. On univariate analysis, smoking and body mass index were significant risk factors for CAS. After multivariate analysis using binary logistic regression model, male sex (odds ratio [OR] 2.707, CI 1.249-5.865, $P = 0.012$), body mass index (OR 1.580, CI 1.335-1.869, $P < 0.001$) and smoking (OR 9.608, CI 4.276-21.590, $P < 0.001$) were considered as independent risk factors. No association of the aforementioned genetic variants with CAS was found.

Conclusions Smoking and body mass index were significant risk factors for CAS. However, none of the considered polymorphisms influencing autonomic activity is a major risk factor for CAS in Chinese patients, which was conflicting with previous studies of other ethnic groups to a certain extent. This result suggests the significant difference of genetic background in different ethnic groups