Correlation between polymorphism of platelet alloantigen genes *HPA-1-5* and type 2 diabetes complication by carotid atherosclerosis in a Chinese population

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ABSTRACT. We investigated the association between the polymorphism of human platelet alloantigen genes *HPA-1-HPA-5* and the complication of type 2 diabetes mellitus (T2DM) by carotid atherosclerosis (CA) among Han people in Guiyang District, China. Ninety-nine T2DM patients were selected from the Affiliated Hospital of Guiyang Medical College and divided into a CA(+) group and a CA(-) group. A control group comprised 100 healthy people from the medical examination center of the same hospital. Genomic DNA from all the subjects was isolated by phenol-chloroform extraction and target genes were amplified using sequence-specific primer-polymerase chain reaction, followed by gene type detection of *HPA*. There were significant differences in allele and genotype frequencies of *HPA-1*, -2, -3, and -5 among the three groups [CA(+), CA(-), and the control group] (P <
and significant differences in allele and genotype frequencies of HPA-1, -2, and -3 between groups CA(+) and CA(-) and the control group (P < 0.05). Moreover, there was a significant difference in allele and genotype frequencies of HPA-5 between the CA(+) and CA(-) groups (P < 0.05). Logistic regression analysis showed that risk factors for T2DM patients developing a CA complication were age, duration of diabetes, high blood pressure, smoking, overweight, abnormal blood lipid levels, and polymorphism of HPA-5. There may be a correlation between T2DM and polymorphism of HPA-1-3. Polymorphism of HPA-5 is probably a risk factor for CA complicating T2DM.

**Key words:** Human platelet alloantigen; Gene polymorphism; Type 2 diabetes mellitus; Carotid atherosclerosis