Correlation between PPARg2 gene Pro12Ala polymorphism and cerebral infarction in an Inner Mongolian Han Chinese population

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ABSTRACT. The variant of PPAR-g2 has been shown to promote the increase of carotid IMT in patients suffering from cerebral infarction and the Pro12Ala polymorphism in the peroxisome proliferator-activated receptor-g2 (PPARg2) gene may be associated with cerebral infarction. However, due to the different genetic background, race, and regional variations of cerebral infarction patient, the results of investigations into this subject differ. The aim of this study was to investigate this polymorphism in relation to cerebral infarction among the Inner Mongolian Han Chinese population. A total of 574 Han Chinese individuals from Inner Mongolia were selected randomly, including 302 patients with cerebral infarction and 272 healthy controls. Polymerase chain reaction-restriction fragment length polymorphism was used to determine genotypes of the PPARg2 Pro12Ala variant and results were confirmed by direct sequencing. Genotype frequencies were found to be 90.7 and 91.9% for P/P, 8.6 and 7.7% for P/A, and 0.7 and 0.4 for A/A in the cerebral infarction and control groups, respectively. No statistically significant differences in genotype distribution were
observed between the two groups (P > 0.05). Moreover, PPARg2 Pro12Ala genotype was not significantly associated with altered fasting blood glucose, blood pressure, or serum lipid profiles. After adjustment for gender, body mass index, and smoking habit, logistic regression was used to analyze the relationship between the Pro12Ala polymorphism and cerebral infarction (odds ratio = 0.888, 95% confidence interval = 0.106-7.460, P > 0.05), revealing that this variant was not the main pathogenic factor involved. Therefore, the Pro12Ala mutation of PPARg2 may not be associated with cerebral infarction in the Inner Mongolian Han Chinese population.

**Key words:** Cerebral infarction; PPAR gamma; Mononucleotide; Polymorphism