GMR Genetics and Molecular Research
Online Journal
ISSN:1676-5680

Association of paraoxonase polymorphisms with carotid artery atherosclerosis in essential hypertension patients

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Genet. Mol. Res. 12 (4): 5174-5185 (2013)
Received March 28, 2013
Accepted July 3, 2013
Published October 30, 2013
DOI http://dx.doi.org/10.4238/2013.October.30.2

ABSTRACT. We investigated the relationships between paraoxonase genetic polymorphisms and essential hypertension in carotid artery atherosclerotic patients. The study included 353 Han participants and 240 Uighur participants from Xinjiang; they were further divided into two groups: essential hypertension with carotid artery atherosclerosis (CAAD group) and essential hypertension without carotid artery atherosclerosis (control group). Genotypes were detected by PCR, followed by restriction analyses with specific endonucleases. In Han people, the M allele frequency was significantly higher in the CAAD group than in the control group. The CC/CS genotype and C allele frequencies were significantly higher in the CAAD group than in the control group. Logistic regression analysis demonstrated that PON1 55M allele [odds ratio (OR) = 1.889] and PON2 311C allele (OR = 1.692) are independent risk factors for CAAD. Combined genotype analysis showed that PON1 55M and PON2 311C alleles are independent risk

factors for CAAD (OR = 1.428). In the Uighur population, the CC/CS genotype and C allele frequencies were significantly higher in the CAAD group than in the control group. Logistic regression analysis demonstrated that the PON2 311C allele is an independent risk factor for CAAD. We conclude that the PON1 55M and PON2 311C alleles are independent risk factors for CAAD in essential hypertension patients from the Xinjiang Han population. We also conclude that the PON2 311C allele is a risk factor for CAAD in essential hypertension patients from the Xinjiang Uighur population.

Key words: Paraoxonase (PON); Gene polymorphism; Essential hypertension; Carotid artery atherosclerotic disease

