Association study between ACE gene polymorphisms and migraine

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In the present study, we investigated the association between the ACE gene I/D and rs4343 polymorphisms and susceptibility to a migraine. As a possible underlying mechanism, the pain may be caused by the high vascular tension and blood pressure. The serum level of the angiotensin I-converting enzyme (ACE) influences the blood pressure and is reported to be higher in the migraine patients. In this regard, it is hypothesized that polymorphisms located in the ACE gene may be associated with a migraine through their possible effects on the gene expression level. Methods: Genotyping of the ACE I/D and rs4343 polymorphisms were performed in 148 unrelated migraineurs (105 were diagnosed with a migraine without aura [MO] and 43 with aura [MA]) and 149 matched healthy controls using conventional PCR and TP-ARMS-PCR, respectively. Results: The association was found between rs4343 A/G polymorphism and migraine (P= 0.019; OR = 0.48; 95% CI, 0.28-0.89). No significant differences in genotype or allele frequencies were found for I/D polymorphism and migraine between migraineurs and controls. Conclusions: In the present study, For the first time, we found evidence for an association between rs4343 and migraine. By considering the role of the rs4343 on the ACE serum level, this polymorphism may be considered in the future pharmacogenetics studies for the treatment of a migraine. However, in order to confirm the present results, further studies are required to validate the significance of the studied genetic variation in diverse ethnic populations.

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