THE IMPACT OF CYP2C19 POLYMORPHISM ON CORONARY ARTERY SPASM IN PATIENTS WITH VASOSPASTIC ANGINA

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Background: Several cytochrome P450 (CYP) enzyme families have been identified in extra hepatic tissues. Recent data have suggested that CYP2C19 localized in vascular smooth muscle and endothelium contribute to the regulation of vascular tone and homeostasis. The aim of this study was to examine the impact of CYP2C19 genotype on coronary artery spasm in patients with vasospastic angina (VSA).

Methods: We examined CYP2C19 genotype in patients with VSA (n=100) who were diagnosed by intra-coronary acetylcholine or ergonovine infusion test and healthy subjects (n=445) as control group. CYP2C19 genotypes were divided into 3 groups; (1) the wild-type homozygotes (CYP2C19*1/*1: EM), (2) the *2, or *3 heterozygotes carrying one loss-of-function allele (*1/*2, *1/*3: IM), and (3) the *2, or *3 homozygotes carrying two loss-of-function alleles (*2/*2, *2/*3, *3/*3: PM).

Results: PM frequency was significantly higher in VSA than in control. In VSA group, the PM frequency was significantly higher in female than in male. Moreover, the incidence of the PM was more found frequently in patients with multi-vessels spasm and drug refractory spasm among VSA patients.

Conclusion: These results suggest a link between coronary spasm and CYP2C19 loss-of-function gene, and that the CYP2C19 *2, *3 homozygotes may be associated with the pathogenesis of coronary artery spasm or the regulation of coronary tonus in VSA patients, especially in female.