ALDH2

The *2 allele of the aldehyde dehydrogenase 2 gene (ALDH2) is the most common variant in Asian populations. The variant resulting in enzyme dysfunction was highly related to coronary artery disease. Recently, genome-wide association studies also discovered that the 12q24 locus near ALDH2 gene was associated with hypertension and ischemic stroke. This study intended to further investigate whether the above variant of ALDH2 increases the risk for ischemic stroke in Taiwanese.

A case-control study was conducted on 914 patients with acute ischemic stroke and 746 nonstroke controls. Polymerase chain reaction and sequencing were used to identify the ALDH2 genotype. Vascular risk factors, stroke subtypes, vascular stenosis, and stroke outcomes were analyzed.

ALDH2 genotypes differed significantly between male controls (*1/*1 versus *1/*2 versus *2/*2=53.8% versus 39.9% versus 6.4%) and male patients with ischemic stroke (*1/*1 versus *1/*2 versus *2/*2=51.5% versus 37.3% versus 11.2%; P=0.048). No significant difference was found between groups for female patients (P=0.228). Multivariate logistic regression analysis revealed that the ALDH2*2/*2 genotype was an independent risk factor for ischemic stroke in male patients (odds ratio, 1.93 [95% confidence interval, 1.07-3.46]; P=0.028). Further analysis of men with ischemic stroke demonstrated that the polymorphism of ALDH2 was not related to vascular risk factors, severity of vascular atherosclerosis, stroke subtypes, and stroke functional outcomes.

The study demonstrated that ALDH2*2/*2 may be an independent risk factor for ischemic stroke in Taiwanese men, but not in Taiwanese women [1].

[1]

Sung YF, Lu CC, Lee JT, Hung YJ, Hu CJ, Jeng JS, Chiou HY, Peng GS. Homozygous ALDH2*2 Is an Independent Risk Factor for Ischemic Stroke in Taiwanese Men. Stroke. 2016 Sep;47(9):2174-9. doi: 10.1161/STROKEAHA.116.013204. Epub 2016 Aug 2. PubMed PMID: 27486170.

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