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RESEARCH CYP2C19*2 GENE POLYMORPHISM WITH ACUTE CORONARY SYNDROME

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Objectives Cytochrome P450 (cytochrome P450 or CYP450, hereinafter referred to as CYP) is a group of ferroheme enzymes. CYP2C19 enzyme is very important metabolic enzyme in this enzyme system. CYP2C19 gene has genetic polymorphism, which presents with different metabolism and has differences in individuals. A marked interindividual difference has been reported in CYP2C19 activity. The research show normal homozygous genotypes CYP2C19*1/*1 represent for extensive metabolizer, mutation homozygous genotypes CYP2C19*2/*2 represent for poor metabolizer, heterozygote genotypes CYP2C19*1/*2 represent for intermediate metabolizer. At present, genotype distribution and allele frequency of CYP2C19 were explored in health the Han nationality and a part of minority population by literatures reported. But only a few literatures report that CYP2C19 gene polymorphism distribute in patients. Few literature reports that CYP2C19 gene polymorphism distribute in patients with acute coronary syndrome. The purpose of this research is to explore CYP2C19*2 gene polymorphism in patients with acute coronary syndrome, furthermore realise distribution of CYP2C19*2 genotype with acute coronary syndrome. And then we calculated and compared genotype and allele frequency in different gender. Clinicians can choose the right drug and rationally adjust the drug dose, by realising genotype with acute coronary syndrome and judging indirect metabolic patterns.

Methods The study includes 264 patients with acute coronary syndrome at the Cardiovascular Department, the Second Affiliated Hospital of Hebei medical university, including 185 males,79 females, aged 29~79 years. CYP2C19*1,*2 were analysed by PCR and molecular hybrid technology. Then we calculated genotype and allele frequency. Then, all patients were divided into two groups of gender (male group and female group), then we compared genotype and allele frequency. All data were analysed using SPSS 13.0 statistical software.

Results

1. CYP2C19 genotype and allele frequency. The analysis results: CYP2C19*1/*1 genotype: 129 patients (48.9%). CYP2C19* 2/*2 genotype: 29 patients (11.0%). Alleles *1:364 (68.9%). Alleles *2:164 (31.1%).
2. CYP2C19 genotype and allele frequency distribution in different gender. Male 185 patients: CYP2C19*1/*1 genotype: 86 patients (46.5%), CYP2C19*1/*2 genotype: 79 patients (42.7%),

CYP2C19*2/*2 genotype: 20 patients (10.8%), alleles*1:251 (67.8%), alleles *2:119 (32.2%). Female 79 patients: CYP2C19*1/*1 genotype: 43 patients (54.4%), CYP2C19*1/*2 genotype: 27 patients (34.2%), CYP2C19*2/*2 genotype: 9 patients (11.4%); alleles *1:113 (71.5%), alleles *2:45 (28.5%).

Conclusions 1. CYP2C19*2/*2 genotype 11.0%, allele *2 (31.1%) frequency in patients with acute coronary syndrome.

3. Different gender genotype CYP2C19*1/*1, CYP2C19*1/*2 and CYP2C19*2/*2 frequency is no statistically different and alleles *1, *2 frequency is no statistical difference.