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THE PARAOXONASE L55M POLYMORPHISM IN PATIENTS WITH CORONARY HEART DISEASE IN CHINESE POPULATION

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Mo Yihao, Chen Xiaoyan, Zhang Xinxia, Hu Xuesong. *Futian People's Hospital Affiliated to Guangdong Medical College, Shenzhen 518000, China*

Objectives To investigate the distribution of the L/M polymorphism of PON-1 gene in Chinese Han nationality and to analyse the association of PON-1 gene, serum PON-1 activity with coronary hear t disease (CHD).

Methods All cases were in-patients in Department of Cardiology of Guangdong Medical University Affiliated Futian Hospital from January 2010 to January 2012. According to the results of coronary angiographies and previous history of percutaneous coronary interventions (PCI), patients were divided into two groups, CHD groups: 160 cases, stenosis of coronary artery >50%; control group: 92 cases, normal coronary artery.

The paraoxonase1 genotypes were determined by MALDI-TOF MS in 160 patients with CHD and 92 healthy persons. PON-1 activity levels were detected by ELISA. SPSS19.0 was used for statistical analyses.

Results I We found that PON1 codon 55 with restriction enzyme digestion has three genotypes in this study population: LL, ML, MM; The frequencies of LL, ML and MM genotypes of PON in CHD group were 97.5%, 2.5% and 0%, respectively;and those in control group were 96.7%, 3.3% and 0%, respectively;the frequencies of L and M allele in CHD group were 98.8% and 1.2%, and those in control group were 98.4% and 1.6%.No differences were found in PON gene Met-Leu polymorphisms among different narrow degrees of coronary artery, and no differences were found between myocardial infarction and non-infarction groups ($p>0.05$).

II Serum PON1 activity [(62.10±50.80) IU/l] in CHD patients was significantly lower than that in healthy controls ((89.91 ±89.82) IU/l) ($p<0.01$).The serum PON1 activity of different PON1 L55M genotypes LL was significantly different between CHD patients and healthy controls ($p<0.01$), and the genotypes ML was no significantly different between CHD patients and healthy controls ($p>0.05$).The serum PON1 activity of different PON1 L55M genotypes had no statistically significant difference in the groups of CHD patients and healthy controls ($p>0.05$).

III PON1 activity level was significantly lower in senior subgroup than in non-senior subgroup in CHD patients ((53.48 ±47.37) IU/l vs (74.26±58.79) IU/l, $p<0.05$).

Conclusions

1. These results suggested that the L55M polymorphism of the PON1 gene was no associated with coronary heart disease in Chinese population.
2. PON-1 L55M genotypes LL maybe one of the risk factors for CHD.
3. The study showed that the activity of PON-1 was lower in the CHD group than that in the non CHD group. The relationship

between the activity of PON-1 and the severity of the coronary artery atherosclerosis lesions was negative.

4. PON-1 activity lee flex the vel can severity of coronary atherosclerosis. The decrease of serum PON-1 activity is one of the risk factors for CHD.