Association of *TCF7L2* gene polymorphisms with susceptibility to type 2 diabetes mellitus in a Chinese Hui population

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**ABSTRACT.** Diabetes is one of costly chronic diseases. Previous studies across several ethnicities have shown that polymorphisms in the transcription factor 7-like 2 (*TCF7L2*) gene were strongly associated with susceptibility to type 2 diabetes (T2DM). In the present study, the association between the *TCF7L2* gene and the susceptibility to T2DM in a Chinese Hui population was interrogated. Polymerase chain reaction (PCR)-restriction fragment length polymorphism analysis and allelic specific PCR were employed for examining the *TCF7L2* gene rs12255372 (G>T) and rs290487 (C>T), and rs7901695 (T>C) polymorphisms, respectively, in 109 healthy individuals and 111 subjects with T2DM who were of Chinese Hui descent and lived in the Ningxia Hui Autonomous Region of China. The results showed that the genotypic frequency of rs290487 and the allelic frequency distributions of the rs7901695 and rs290487 loci were not significantly different between patients and controls in this population. However, both the genotypic and the allelic frequencies at rs12255372 exhibited statistical...
differences between the patients with T2DM and the unaffected cohort (P < 0.01). In addition, the frequency of the G allele at the rs12255372 locus in the patients was higher than that in healthy individuals (OR = 1.198, 95%CI = 1.097-1.307). These findings suggest that the TCF7L2 rs12255372 (G>T) polymorphism might be one of the most important genetic factors associated with T2DM susceptibility, and that individuals in the Chinese Hui population who carry a G allele at this locus might be at risk to develop T2DM.

Key words: TCF7L2; Polymorphism; Type 2 diabetes mellitus; Chinese Hui population