Association of CD226 polymorphisms with the susceptibility to type 1 diabetes in Chinese children

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ABSTRACT. Polymorphisms in the CD226 gene have been reported to be associated with autoimmune diseases. The aim of our study was to investigate the association between two single nucleotide polymorphisms (SNPs) (rs763361 and rs727088) in the CD226 gene and the risk for developing type 1 diabetes (T1D) in Chinese Han children. This case-control study included a total of 152 Chinese children with T1D and 304 matched-pair, healthy controls based on age and gender. The genetic variants of the rs763361 and rs727088 SNPs in the CD226 gene were determined using the polymerase chain reaction and restriction fragment length polymorphism method. The CD226 rs763361 polymorphism increased the risk of T1D in the genotype [P < 0.001, odds ratio (OR) = 3.9, 95% confidence interval (CI) = 2.24-6.76], dominant (P < 0.001, OR = 2.1, 95%CI = 1.40-3.14), and recessive (P < 0.001, OR = 0.5, 95%CI = 0.30-0.84) models. Additionally, the carriers of the T allele were more susceptible to T1D (P < 0.001, OR =
2.1, 95% CI = 1.58-2.79). Carriers of the T allele who were younger than 10 years of age at disease onset had an increased risk of T1D than those who were older at the disease onset. However, there was no association between the CD226 rs727088 SNP and risk for developing T1D. These findings revealed that CD226 rs763361 polymorphism was significantly associated with susceptibility to T1D and that the presence of the T allele might be a genetic factor for susceptibility to T1D.

**Key words:** Type 1 diabetes; CD226; Polymorphism; Chinese