Correlation between polymorphisms in the glucocorticoid receptor gene *NR3C1* and susceptibility to asthma in a Chinese population from the Henan Province

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**ABSTRACT.** The aim of this study was to investigate the association between four single nucleotide polymorphisms in *NR3C1* (*Tth1111, BclI, ER22/23EK,* and *N363S*), which encode the glucocorticoid receptor, and asthma susceptibility in patients from the Henan Province of China. Three hundred and twenty-eight patients with asthma and 60 healthy volunteers were recruited to this study. The target SNPs were genotyped by polymerase chain reaction (PCR)-high resolution melting and PCR-restriction fragment length polymorphism. The frequencies of the AA (8.84%) and GG (30.79%) genotypes of *Tth1111* were higher, and that of the AG genotype was lower (60.37%), in the asthma patients compared to that seen in healthy controls (5.00, 26.67, and 68.33%, respectively). On the other hand, asthma patients showed higher frequencies of the AA genotype (78.05%) of N363S, and lower
frequencies of the AG and GG genotypes (15.55 and 6.40%), compared to healthy volunteers (71.67, 18.33, and 10.00%, respectively). Neither of these differences were found to be statistically significant. Moreover, we observed no significant differences in the genotype or allele frequencies of the BclI and ER22/23EK SNPs between the patient and control groups. In conclusion, SNPs in NR3C1 were not significantly associated with asthma in patients from the Henan Province. Patients showed higher frequencies of the AA and GG genotypes of Tth111I and the AA genotype of the N363S SNP compared to healthy volunteers, although these differences were not significant.

**Key words:** NR3C1; Polymorphism; Tth111I; BclI; ER22/23EK; N363S; Asthma