



# Association between atopic dermatitis-related single nucleotide polymorphisms rs4722404 and psoriasis vulgaris in a southern Chinese cohort

G. Shi<sup>1\*</sup>, C.M. Cheng<sup>2\*</sup>, T.T. Wang<sup>1\*</sup>, S.J. Li<sup>1</sup>, Y.M. Fan<sup>1</sup> and K.J. Zhu<sup>1</sup>

<sup>1</sup>Department of Dermatology, Affiliated Hospital of Guangdong Medical College, Zhanjiang, Guangdong, China

<sup>2</sup>Department of Hematology, Affiliated Hospital of Guangdong Medical College, Zhanjiang, Guangdong, China

\*These authors contributed equally to this study.

Corresponding author: K.J. Zhu

E-mail: zhukunju1111@163.com

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**ABSTRACT.** Genome-wide association studies have identified a single nucleotide polymorphism (SNP), rs4722404, in the caspase recruitment domain family member 11 (*CARD11*) gene, which is associated with atopic dermatitis. Previous genetic studies have also reported genomic similarities between psoriasis and atopic dermatitis. However, little is known regarding the association between rs4722404 and psoriasis vulgaris (PsV). The aim of this study was to evaluate the relationship between rs4722404 and the risk and clinical features of PsV in a southern Chinese Han cohort. This hospital-based case-control study included 355 patients with PsV and 213 control subjects (N = 568); the samples were analyzed using a standard SNaPshot assay. We identified no association between the SNP and risk of PsV. However, a stratified analysis according to the age of onset, family history, and

psoriasis area and severity index sub-phenotypes revealed a significant correlation between the C allele and CC+CT genotype of rs4722404 and an increased risk of early-onset PsV ( $\leq 40$  years) compared to that of late-onset PsV ( $> 40$  years) (odds ratio, OR = 1.486; P = 0.026 for C allele and OR = 1.718, P = 0.023 for CC+CT genotype). The results of this study suggested that the SNP rs4722404 in *CARD11* could increase the risk of early-onset PsV. Further studies must analyze the potential function of *CARD11* in the pathogenesis of PsV.

**Key words:** *CARD11*; Single nucleotide polymorphism (rs4722404); Psoriasis vulgaris; Clinical features