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Association of the *TNF-α* +489 G/A polymorphism with chronic obstructive pulmonary disease risk in Asians: meta-analysis

K. Cui, X.Y. Ge and H.L. Ma

Department of Epidemiology and Biostatistics, School of Public Health, Liaoning Medical University, Jinzhou Liaoning, China

Corresponding author: H.L. Ma
E-mail: mahonglinly@163.com

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ABSTRACT. The association between the *TNF-α* +489 G/A polymorphism and chronic obstructive pulmonary disease (COPD) remains controversial because of small group size and varied design among different studies. In the present study, a meta-analysis was conducted to assess the association between the +489 G/A polymorphism and COPD risk. A comprehensive search was conducted to identify articles that have reported an association between the *TNF-α* +489 G/A polymorphism and COPD risk. Pooled odds ratios (ORs) with 95% confidence intervals (CIs) were calculated under both dominant (AA+GA *vs* GG genotypes) and allele (A *vs* G) models. Heterogeneity was assessed, as well as publication bias. Nine articles with ten eligible studies were included in this analysis. Significant association between the +489 G/A polymorphism and COPD was identified in Asians under the allele model (OR = 1.582, 95%CI = 1.035-2.419). However, no significant difference was found in the Caucasian groups. Strong evidence for between-study heterogeneity was identified under both models, and no publication bias was detected. Our results indicated a potential role of the A allele of the *TNF-α* +489 G/A polymorphism

in increasing COPD risk in Asians, but not in Caucasians. Additional studies will be necessary to verify this conclusion.

Key words: Chronic obstructive pulmonary disease; Meta-analysis; Tumor necrosis factor-alpha; Polymorphism

