Association between \textit{TNF-\alpha} rs1799724 and rs1800629 polymorphisms and the risk of Crohn’s disease

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\textbf{ABSTRACT.} We investigated the associations between 2 major tumor necrosis factor-\(\alpha\) (\textit{TNF-\alpha}) polymorphisms, rs1799724 C>T and rs1800629 G>A, and the susceptibility to Crohn’s disease (CD) using a meta-analysis framework. The PubMed, EBSCO, Ovid, Wiley, Web of Science, WANFANG, and VIP databases (last updated search in October 2014) were comprehensively searched for relevant published studies. The studies retrieved from database searches were filtered based on inclusion and exclusion criteria, and the resultant data extracted from the selected studies were analyzed using the Comprehensive Meta-analysis 2.0 software. Eleven case-control studies, containing 2000 CD patients and 3499 healthy controls, were identified as relevant to this meta-analysis. Data extracted from these 11 studies were analyzed to understand the role of the 2 \textit{TNF-\alpha} polymorphisms in CD. We found that the \textit{TNF-\alpha} rs1799724 C>T
polymorphism increased the susceptibility to CD (allele model: OR = 1.293, 95%CI = 1.090-1.534, P = 0.003; dominant model: OR = 1.258, 95%CI = 1.031-1.534, P = 0.024). In contrast, we found no significant association between the \textit{TNF-\alpha} rs1800629 G>A polymorphism and CD susceptibility (allele model: OR = 1.005, 95%CI = 0.864-1.170, P = 0.945; dominant model: OR = 0.962, 95%CI = 0.809-1.145, P = 0.667). This meta-analysis showed that the \textit{TNF-\alpha} rs1799724 C>T polymorphism is associated with CD susceptibility, while the \textit{TNF-\alpha} rs1800629 G>A polymorphism appeared to have no correlation with the susceptibility to CD.

\textbf{Key words:} Case-control study; Crohn’s disease; Meta-analysis; Polymorphism; Tumor necrosis factor-\alpha