Interleukin-10 polymorphisms and nasopharyngeal carcinoma risk: a meta-analysis


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ABSTRACT. It has been reported that interleukin-10 (IL-10) promoter genes (1082 A/G, 819 T/C, 592 A/C) are associated with nasopharyngeal
carcinoma (NPC). However, the results remain controversial and ambiguous. To resolve inconsistencies in published data, we performed a meta-analysis to ascertain the association between IL-10 polymorphisms and NPC risk. Two case-control studies and two cohort studies were quantitatively analyzed to evaluate IL-10 promoter gene polymorphisms and NPC risk. Odds ratios (ORs) and their 95% confidence intervals (CIs) were calculated for each genetic model and allelic comparison. A random-effect model or a fixed-effect model was used to calculate the overall combined risk estimates. Overall, the variant genotypes (AA and AG) of the IL-10-1082 A/G polymorphism were associated with elevated risk of NPC compared with the GG homozygote (AG vs GG: OR = 1.77; 95%CI = 1.39-2.26; AG + GG vs AA: OR = 1.78; 95%CI = 1.42-2.22); no significant associations were observed in allelic contrast and the recessive model. Strong positive association was seen in the cohort studies but not in the case-control studies. No statistically significant association was detected between IL-10-819 T/C and IL-10-592 A/C polymorphisms and NPC. Additionally, publication bias was not found. Based on the current evidence, this meta-analysis suggests that IL-1082 A/G polymorphism may increase the risk of NPC, but IL-10-819 T/C and IL-10-592 A/C polymorphisms do not. Further multicenter studies that are better controlled are required to confirm these findings.

**Key words:** Interleukin-10; Meta-analysis; Nasopharyngeal carcinoma; Polymorphism; Promoter genes.