



Meta-analysis demonstrates association of the TGF- β 1 gene -C509T polymorphism with susceptibility to IgA nephropathy in European but not in Asian populations

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ABSTRACT. There are conflicting reports associating the TGF- β 1 gene -C509T polymorphism with susceptibility to IgA nephropathy. We investigated this association through a meta-analysis. Case-control studies were searched up to January 2012; the genotype frequencies in the control group were found to be consistent with Hardy-Weinberg equilibrium. Publication bias was tested by funnel plot and the Egger regression test. Eight studies, comprising 1364 cases and 1483 controls, were included. Significant heterogeneity was observed ($\chi^2 = 18.29$, $P = 0.01$). Under the random-effects model, the overall odds ratio (OR) was 1.01 [95% confidence interval (95%CI) = 0.74-1.38; $P = 0.94$]. In the subgroup analysis based on ethnicities, no significant effect was observed in the Asian descent groups (five comparisons, OR = 0.78; 95%CI = 0.53-1.15; moderate heterogeneity between studies). However, an association was observed in the European descent groups (OR = 1.5; 95%CI = 1.15-1.96; $P = 0.003$; no significant heterogeneity between studies). There was no evidence of publication bias according to funnel plot and the Egger regression test ($a = -2.16$, $P = 0.23$). There was

heterogeneity between studies and no clear evidence of an association between the TGF- β 1 gene -C509T polymorphism and susceptibility to IgA nephropathy in the worldwide population. Subgroup analysis suggests that the TGF- β 1 gene -C509T polymorphism would not be a risk factor for IgA nephropathy in Asians but might play a role in Europeans. More studies are required for definitive conclusions.

Key words: IgA nephropathy; -C509T polymorphism; TGF- β 1 gene; Meta-analysis