Vitamin D receptor FokI gene polymorphism and tuberculosis susceptibility: a meta-analysis

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ABSTRACT. Numerous studies have evaluated the association between FokI polymorphisms in the vitamin D receptor (VDR) gene and tuberculosis risk. However, the specific association remains controversial. In this study, we performed a meta-analysis to assess the association between the VDR gene FokI polymorphism and tuberculosis. Published studies from the PubMed and Embase databases were retrieved. The pooled odds ratio (OR) with 95% confidence interval (CI) was calculated using fixed- or random-effect models. Overall, a significant association was found between FokI polymorphism and tuberculosis risk when all studies were pooled (ff vs FF: OR = 1.36, 95%CI = 1.11-1.66; ff vs Ff: OR = 1.38, 95%CI = 1.14-1.67; dominant model: OR = 0.73, 95%CI = 0.61-0.88). In subgroup analysis by race, a significant association was found between FokI polymorphism and tuberculosis risk in Asians (ff vs FF: OR = 1.71, 95%CI = 1.02-2.85; ff vs Ff: OR = 1.86, 95%CI = 1.40-2.47; dominant model: OR = 0.55, 95%CI = 0.42-0.72), and no significant association was observed among Caucasians and Africans. In conclusion, the FokI polymorphism in the VDR gene may be related to an increased risk of tuberculosis in Asians. Further large and well-designed studies are needed to confirm these conclusions.

Key words: FokI polymorphism; Tuberculosis; Vitamin D receptor