Association between V4 polymorphism in the \textit{ADAM33} gene and asthma risk: a meta-analysis

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ABSTRACT. In this study, we evaluated the associations between the V4 (rs2787094 G>C) polymorphism in a disintegrin and metalloproteinase domain 33 (\textit{ADAM33}) gene and asthma risk. We searched Web of Science, PubMed, Google Scholar, EBSCO, Cochrane Library, and CBM databases from inception through August 2013, without language restrictions. Meta-analysis was performed using the STATA 12.0 software. Crude odds ratios and 95\% confidence intervals were calculated. Eight case-control studies were included, with a total of 2128 asthma patients and 3134 healthy controls. Our results suggest that the \textit{ADAM33} V4 polymorphism increases the risk of asthma. Subgroup analysis according to the source of controls revealed significant associations between the \textit{ADAM33} V4 polymorphism and risk of asthma in population- and hospital-based subgroups under allele and dominant models (all P < 0.05). Further subgroup analysis using the genotyping method suggested that the \textit{ADAM33} V4 polymorphism is correlated with asthma risk in the polymerase chain reaction-restriction fragment length polymorphism subgroup. However, no association was found in the non-polymerase chain reaction-restriction fragment length polymorphism subgroup. Meta-regression analyses showed that the genotyping method may be a main source of heterogeneity (P = 0.003). Our meta-analysis suggests that the \textit{ADAM33} V4 polymorphism
contributes to the risk of asthma and may be utilized as a biomarker for the early diagnosis of asthma.

**Key words:** ADAM33; Asthma; Polymorphism; Meta-analysis