



# Correlation between the genetic polymorphism of *ORMDL3* gene and asthma risk: a meta-analysis

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**ABSTRACT.** While increasing scientific evidence suggests that the *ORMDL3* rs7216389 polymorphism may contribute to a higher susceptibility to asthma, many of the current studies have yielded inconclusive results. This meta-analysis aimed to assess the association between the *ORMDL3* rs7216389 polymorphism and the risk of asthma. An extensive literature search for relevant studies was conducted in PubMed, Embase, the Web of Science, the Cochrane Library, Chinese National Knowledge Infrastructure, and Google Scholar. This meta-analysis was performed using the STATA 12.0 software. Crude odds ratios (OR) and their 95% confidence intervals (CI) were calculated. Thirteen studies were included with a total of 14,851 subjects, comprised of 6739 patients with asthma and 8112 healthy controls. Our meta-analysis results revealed that the *ORMDL3* rs7216389 polymorphism may be associated with an increased risk of asthma (allele model: OR = 1.39, 95%CI = 1.27-1.52, P < 0.001; dominant model: OR = 1.46, 95%CI = 1.31-1.62, P < 0.001; recessive model: OR = 1.57, 95%CI = 1.37-1.81, P < 0.001; homozygous model: OR = 1.58, 95%CI = 1.32-1.90, P < 0.001; heterozygous model: OR = 1.54, 95%CI = 1.30-1.82, P < 0.001). We also found significant associations in our subgroup analyses based on ethnicity and type of asthma. However, in our subgroup analysis based

on sources of controls, an association was found in the population-based case-control subgroup but not in the hospital-based case-control subgroup. This meta-analysis indicates that *ORMDL3* rs7216389 may contribute to increasing susceptibility to asthma.

**Key words:** *ORMDL3*; rs7216389; Polymorphism; Asthma; Meta-analysis