MMP-9 genetic polymorphism may confer susceptibility to COPD

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Received October 26, 2015
Accepted December 3, 2015
Published April 25, 2016
DOI http://dx.doi.org/10.4238/gmr.15026272

ABSTRACT. Correlations between genetic polymorphisms of three matrix metalloproteinase (MMP) genes and susceptibility to chronic obstructive pulmonary disease (COPD) were investigated. Relevant case-control studies were selected using rigorous inclusion and exclusion criteria. The comprehensive Meta-analysis 2.0 software was used to conduct the statistical analysis. An odds ratio with 95% confidence intervals was applied to assess the correlation between genetic polymorphisms of MMPs and susceptibility to COPD. Twelve high-quality studies were selected for inclusion in this meta-analysis. These studies included a combined total of 1533 COPD patients and 1530 healthy controls. The result of the meta-analysis showed that MMP-9 rs3918242 C > T was significantly correlated with increased susceptibility to COPD. However, MMP-1 rs1799750 1G > 2G and MMP-3 rs3025058 5A > 6A were not associated with COPD risk (all P > 0.05). Based on our meta-analysis, MMP-9 rs3918242 C > T is correlated with susceptibility to COPD, but MMP-1 rs1799750 1G > 2G and MMP-3 rs3025058 5A > 6A are not. These results should be further confirmed using a larger sample size.

Key words: MMP-1; MMP-3; MMP-9; COPD; rs3918242; rs1799750