Abstract

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Genomic Variant in IL-37 Confers A Significant Risk of Coronary Artery Disease

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Abstract

The interleukin 1 family plays an important role in the immune and inflammatory responses. Coronary artery disease (CAD) is a chronic inflammatory disease. However, the genetic association between IL37, the seventh member of the IL-1 family, and CAD is unknown. Here we show that a single nucleotide polymorphism in the IL-37 gene (rs3811047) confers a significant risk of CAD. We have performed an association analysis between rs3811047 and CAD in two independent populations with 2,501 patients and 3,116 controls from China. Quantitative RT-PCR analysis has been performed to determine if the IL-37 expression level is influenced by rs3811047. We show that the minor allele A of rs3811047 is significantly associated with CAD in two independent populations under a recessive model (Padj=5.51×10−3 / OR=1.56 in the GeneID Northernern population and Padj=1.23×10−3 /OR=1.45 in the GeneID Central population). The association became more significant in the combined population (Padj=9.70×10−6 / OR=1.47). Moreover, the association remains significant in a CAD case control population matched for age and sex. Allele A of rs3811047 shows significant association with a decreased mRNA expression level of IL-37 (n=168, P=3.78×10−4). These data suggest that IL37 is a new susceptibility gene for CAD, which provides a potential target for the prevention and treatment of CAD.

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Biography

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