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

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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 ($P_{adj}=5.51 \times 10^{-3}$ / OR=1.56 in the GeneID Northern population and $P_{adj}=1.23 \times 10^{-3}$ / OR=1.45 in the GeneID Central population). The association became more significant in the combined population ($P_{adj}=9.70 \times 10^{-6}$ / 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 ($n=168$, $P=3.78 \times 10^{-4}$). These data suggest that IL37 is a new susceptibility gene for CAD, which provides a potential target for the prevention and treatment of CAD.

Biography

DURaid ALMIDFAI has completed his PhD at the age of 30 years from Huazhong University of Science and Technology and postdoctoral studies from Henan University School of Medicine. He is the director of Fuwai Central China of Cardiovascular Hospital. He has published more than 6 papers in reputed journals and has been serving as an editorial board member of repute.

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