

Association of 1565C/T Polymorphism of Integrin Beta-3 (ITGB3) Gene and Increased Risk for Myocardial Infarction in Patients with Premature Coronary Artery Disease among Iranian Population

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Abstract : Contradictory results have been obtained regarding the role of integrin, beta 3 (ITGB3) gene polymorphisms in occurrence of acute myocardial infarction (MI) in patients with coronary artery disease (CAD). Hence, we aimed to assess the association between 1565C/T polymorphism of ITGB3 gene and increased risk for acute MI in patients who suffered premature CAD in Iranian population. Our prospective study included 1000 patients (492 men and 508 women aged 21 to 55 years) referred to Tehran Heart center during a period of four years from 2008 to 2011 with the final diagnosis of premature CAD and classified into two groups with history of MI (n = 461) and without of MI (n = 539). The polymorphism variants were determined by PCR-RFLP technique by entering 10% of randomized samples and then genotyping of the polymorphism was also conducted by High Resolution Melting (HRM) method. Among study samples, 640 were followed with a median follow-up time 45.74 months for determining association of long-term major adverse cardiac events (MACE) and genotypes of polymorphisms. There was no significant difference in the frequency of 1565C/T polymorphism between the MI and non-MI groups. The frequency of wild genotype was 69.2% and 72.2%, the frequency of homozygous genotype was 21.3% and 18.4%, and the frequency of mutant genotype was 9.5% and 9.5%, respectively (p=0.505). Results were also similar when adjusted for covariates in a multivariate logistic regression model. No significant difference was also found in total-MACE free survival rate between the patients with different genotypes of 1565C/T polymorphism in both MI and non-MI group. The carriage of the 1565C/T polymorphism of ITGB3 gene seems unlikely to be a significant risk factor for the development of MI in Iranian patients with premature CAD. The presence of this ITGB3 gene polymorphism may not also predict long-term cardiac events.

Keywords : coronary artery disease, myocardial infarction, gene, integrin, beta 3, polymorphism

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