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Abstract Topic: - Complex traits and polygenic disorders

Abstract Title: - Elevated serum LDL levels in response to the genetic variability and its relationship with various risk factors in Acute Coronary Syndrome: A Case-control study

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Aims: - Coronary Artery Disease (CAD) is one of the leading cause of mortality and morbidity in the world. According to the CREATE registry (the largest data from Indian patients with Acute Coronary Syndrome-ACS), the pattern of ACS among Indian population is much different from that of the Western populations. In order to keep the balance of cellular cholesterol, the low-density lipoprotein receptor (LDLR) is crucial. Hence, LDLR is a good gene for candidate SNP investigations. Aim of this study was to analyse any correlation between the LDLR (C1773T) gene polymorphism with the clinical and biochemical risk factors.

Methods: - The study has been approved by the Institutional Human Ethics Committee of Gujarat University. Our sample size included 750 patients with ACS and 250 controls. All the demographic, Laboratory investigations, Echocardiographic and Catheterization details were recorded from the patients hospital file. Blood samples (approx. 4 ml) were collected and, the LDLR gene polymorphism was done by PCR and RFLP analysis.

Results: - The prevalence of LDLR rs688 (C1773T) TT genotype in our study population was significantly higher than in control individuals. Additionally, from the current study we can state that the T allele has a strong association with HbA1C, TC, LDL, Total Lipids and Troponin I.

Conclusions: - An elevated risk of atherosclerosis and coronary heart disease may occur from mutations in the LDLR gene, which can cause a large increase in plasma LDL levels, as evident from the current study. We conclude that the T allele is a strong predictor for ACS. The current study is the first of its kind to be done in Gujarati Population.

Keywords: - The prevalence of LDLR rs688 (C1773T) TT genotype in our study population was significantly higher than in control individuals. Additionally, from the current study we can state that the T allele has a strong association with HbA1C, TC, LDL, Total Lipids and Troponin I.