

9th Diabetologists Conference

June 06-08, 2016 Dallas, Texas, USA

Haplotypic study in Ox-LDL receptor (CD36) gene and its role as molecular marker in T2DM

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Type II diabetes mellitus (T2DM) is now considered to be a serious disease that is always associated with long-term and life-threatening complications, attributed deaths and economic burden to nations. Several Single nucleotide polymorphisms (SNPs) in CD36 gene have been found to be associated with metabolic syndrome and HDL metabolism, both predictors of the risk of heart disease and T2DM. We studied eleven SNPs in entire CD36 gene and their association with 100 each of control subjects and T2DM. The haplotypic analysis of few significant SNPs was carried out in individuals from families with diabetic history in order to evaluate its utility in disease prediction. Polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) was used for genotyping. Ten families with a family history of diabetes were identified and blood samples were collected from as many family members as possible. Genotyping of three SNPs viz. rs1761667 (G>A) in exon 1 A, rs3211938 (T>G) in exon 10 and rs3212018 (16 bp del) in exon 14 was performed in all samples. In our study on North Indian population SNP G>A (rs1761667) genotypes showed a highly significant association ($P<0.001$) and 1264T>G (rs3211938) showed mild significant for T2DM ($P=0.045$). Moreover, individuals having a 'GATTC1' haplotype might be at risk of developing T2DM ($P<0.001$) and therefore might be susceptible to related complications. In addition of it, 'A' 'G' and 'G' alleles of SNPs rs1761667 (G>A), rs3211938 (T>G) and rs1984112 (T>G) respectively tend to have increased BMI. Such studies may be helpful for disease prediction in individuals at risk of T2DM and could be used as a genetic marker.

Biography

Sunaina Gautam has completed her PhD from Department of Zoology, University of Lucknow, India. Presently, she has joined as a Postdoctoral fellow in the Department of Biochemistry, King's George Medical University Lucknow, India under the D.S. Kothari Post doc fellowship scheme. She has published more than 10 papers in national and international reputed journals. She has won few prizes including Young Scientist Award in conference organized by the Zoological Society of India. She has co-supervised the dissertation work of MSc students and was also involved in various conferences and workshops organized by her laboratory.

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