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Association of common variants of CDKN2A/2B rs10811661 (C/T) and WFS1 rs6446482 (C/G) to type 2 diabetes mellitus in the Indian population of eastern Uttar Pradesh

Sunita Singh

Banaras Hindu University, India

Abstract

Recent genome-wide association studies (GWAS) have identified several unsuspected genes that significantly increase the risk of type 2 diabetes mellitus (T2DM). We aimed to replicate the association of a common variant each in *CDKN2A/2B* (rs10811661) and *WFS1* (rs6446482) in the population of Eastern Uttar Pradesh, India. These variants have been identified to be differentially associated with T2DM in different ethnic groups in previous GWAS. We found SNP rs10811661 of *CDKN2A/2B* (OR 1.50, 95% CI 1.109-2.032, *P*=0.009) and SNP rs6446482 of *WFS1* (OR 1.43, 95% CI 1.074-1.896, *P*=0.014) as significant risk factors for T2DM in Eastern Uttar Pradesh population. Normal Glucose-Tolerant (NGT) subjects carrying risk allele of rs10811661 (*C/T*) and rs6446482 (*C/G*) polymorphisms had significantly higher Fasting Plasma Glucose (FPG) and 2-hour Postprandial Plasma Glucose (2h-PPPG) levels compared to non-carriers.Our study replicates the association of well established common variants of *CDKN2A/2B* rs10811661 (C/T) and *WFS1* rs6446482 (C/G) with type 2 diabetes in the population of Eastern Uttar Pradesh, India. Interestingly, our data show larger effect size for both of the SNPs than those reported in European populations.

Biography

Sunita Singh, Ph.D. is Assistant Professor in Banaras Hindu University, India. She did her Ph.D. in Biochemical and Evolutionary Genetics and post doc in Population Genetics from Banaras Hindu University. Dr. Singh's current research work involves genetics of complex diseases, including genetics of Type 2 Diabetes and molecular pathology of multiple cancers.