

No association of TCF7L2 and ENPP1 gene polymorphisms in Malaysian type 2 diabetes Mellitus with or without hypertension.

Abstract

Several genome-wide association studies were done extensively in many populations in finding the candidate genes predisposing to Type 2 Diabetes Mellitus (T2DM). In that way, Transcription Factor 7-Like 2 (TCF7L2) and Ectoenzyme Nucleotide Pyrophosphate Phosphodiesterase 1 (ENPP1) genetic variants were found to be associated with increased risk of T2DM in various populations. In this cross-sectional study, rs7903146 (C/T) polymorphism of TCF7L2 gene and K121Q polymorphism of ENPP1 gene was analyzed in T2DM with or without hypertension in Malaysian subjects. A total of 165 samples consisting of 50 T2DM without hypertension, 55 T2DM with hypertension and 60 healthy individuals were recruited for this study. Genomic DNA was amplified to determine the genotypes of rs7903146 (C/T) and K121Q polymorphisms using hot start PCR followed by RFLP method. The mean age for patient and control subjects was 57.26 ± 10.02 and 45.65 ± 10.93 years, respectively. There was no significant differences ($p > 0.05$) found in genotype and allele frequency for both rs7903146 (C/T) and K121Q polymorphism of TCF7L2 and ENPP1 gene, respectively. This preliminary results show that both polymorphisms was not an independent risk factor to T2DM with or without hypertension in Malaysian subjects. However, replication studies in this population with larger sample size was strongly recommended.

Keyword: PCR; RFLP; Genetic polymorphism; Risk factor; Malaysian population; Hypertension.