

COMMON VARIANTS IN THE ADIPONECTIN RECEPTOR 2 (ADIPOR2) GENE IS ASSOCIATED IN T2DM PATIENTS IN WITH AND WITHOUT CARDIOVASCULAR DISEASE AND ADIPONECTIN LEVELS

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ABSTRACT

Background

Patients of type 2 diabetes mellitus (T2DM) are at high risk of developing cardiovascular disease. Two receptor forms, ADIPOR1 and ADIPOR2, mediate biologic effects of adiponectin. ADIPOR2 is a cell-surface receptor abundantly expressed in skeletal muscle and liver.

Methods

A case-control study conducted to find the association between SNP rs11061971 in T2DM with and without CVD in Al-Najaf Governorate, Iraq. The study included 203 T2DM patients with CVD randomly selected based on World Health Organization (WHO) guideline and 133 T2DM patients without CVD as controls group. DNA was extracted from blood and genotyped by PCR-RFLP by using (BtsCI) enzyme. Multinomial logistic regression was applied to compare the proportions of genotypes and alleles. The odds ratio for risk of developing CVD in T2DM was calculated with and without adjustment for age, sex, and BMI.

Results

Adiponectin receptor R₂ gene polymorphism rs11061971 (homozygous TT and heterozygous AT genotype) was significantly associated with CVD in T2DM patients and the frequency of T allele was higher in T2DM with CVD patients compared to that without CVD.

Conclusion

The SNP of adiponectin receptor 2 gene is involved the pathogenesis of T2DM with CVD in Al-Najaf Governorate, Iraq, Carriers of the homozygous genotype (TT) and heterozygous (AT) genotype of rs11061971 have strong association and increased risk of development of T2DM with CVD. The T allele frequency of rs11061971 was association with increased risk of development of T2DM with CVD.). R2 adiponectin receptors also play an important role in the metabolism of VLDL cholesterol and TG.

KEYWORDS: Diabetes Mellitus (T2DM), World Health Organization (WHO), Multinomial Logistic Regression, VLDL Cholesterol and TG