Polymorphism in adiponectin receptor gene type 1 (ADIPOR1) in individuals with coronary artery disease with and without type 2 diabetes in the state of Qatar

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**Background:** Previous studies demonstrated polymorphisms of adiponectin receptor type1 (AdipoR1) as a strong determinant of coronary artery diseases (CAD) susceptibility in type 2 diabetes. The aim of the study is to investigate the associations of the genetic marker (SNP) no of AdipoR1 locus; rs10920531 with CAD in patients with and without type 2 diabetes in the population of Qatar.

**Methods:** Blood was drawn from a total of 189 subjects. For the detection of the SNP (rs10920531, and rs7539542), extracted DNA was carried out by the 5’ nuclease assay using TaqMan MGB probe by means of an ABI 7900 [Applied Biosystems].

**Results:** Both groups of CAD, with and without diabetes mellitus (DM) had insignificant difference within the following parameters; age, BMI, glucose, lipid profile, cardiac enzyme markers, insulin and adiponectin. Females were 8.4% of all studied patients. The odds ratio and the frequency distribution of the genotype (rs1092531, A>C) revealed that (35.1%), [35.8%], had AA and (41.5%), [41.1%] had AC, and (23.4.0%), [23.1%] had CC among in control and cardiac patients with and without DM, respectively with P value=0.94. The odds ratio was 1.02 and 95% CI was (0.85-1.43). The frequency distribution of the genotype (rs7539542, C>G) revealed that (34.0%), [41.1%], had CC and (47.9%), [34.7%] had CG, and (18.1.0%), [24.2%] had GG among control and cardiac patients with and without DM, respectively with P value=0.37. The odds ratio was 0.98 and 95% CI was (0.65-1.47). The odds ratio was 0.77 for rs1092531, A>C and 0.92 for rs7539542, C>G among cardiac patients with and without diabetes. Using logistic regression analysis, LDL-C was significantly associated with both rs1092531, A>C and rs7539542, C>G in CAD patients. Hypertension was significantly associated with rs7539542.

**Conclusion:** No significant association was found between AdipoR1 locus; (rs1092531, A>C and rs7539542, C>G) and the cardiovascular disease (CVD) risks. Of all CVD risks, Only LDL-C correlated significantly with (rs1092531, A>C and rs7539542, C>G). Hypertension was significantly associated with s7539542. Further studies are needed among the Qatari population to screen polymorphisms of the entire diponectin gene and its receptors.