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# A genomic study of type 2 diabetics attending the outpatient clinic of national institute of diabetes and endocrinology

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**Background:** A panel of established variant single nucleotide polymorphisms (SNPs) in patient diagnosed with type 2 diabetes mellitus (T2DM) is being evaluated within many studies compared to a non-diabetic control population. These results will be used as a basis of comparison to analyze risk-conferring genotypes in T2DM to demonstrate T2DM risk associated factors.

**Subjects and Methods:** This study was conducted on a total number of 71 subjects which were subdivided as follows: Group1: Included 49 type2 diabetic subjects were selected from the outpatient clinic of National Institute of Diabetes and Endocrinology (NIDE), Group2: included 22 normal healthy subjects (as controls), matching the same age and sex. In addition to the routine investigation, the following SNPs genotypes were studied (rs10010131, rs7754840, rs4402960/rs1470579, rs13266634 and rs10923931).

**Results:** The IGF2BP2 rs4402960/rs1470579 polymorphism showed the highest odds ratio (OR) for type2 diabetes group (4.714). Odds ratio of other polymorphisms ranged from 1.131 to 4.270. The logistic regression used to assess the contribution of individual SNPs to risk of type2 diabetes showed that the IGF2BP2 rs4402960/rs1470579 polymorphism showed significant risk of type2 diabetes, p-value is less than 0.05 and this means that we have evidence against H0 (H0: coefficient =0). The other polymorphisms (WFS1 rs10010131, CDKAL1 rs7754840, SLC30A8 rs13266634, and NOTCH2 rs10923931) present with p-value which is greater than 0.05 and this means that we have little evidence against H0, i.e.: we accept H0, thus (WFS1 rs10010131, CDKAL1 rs7754840, SLC30A8 rs13266634, and NOTCH2 rs10923931) are showed insignificant risk of type2 diabetes. Within positive cases to SNPs IGF2BP2 rs4402960/rs1470579, there are significant difference in triglycerides between two allele positive cases and one-allele positive cases.

**Conclusion:** It can be concluded that SNPs (IGF2BP2 rs4402960/rs1470579) one of the evaluated 5 SNPs was found to be associated with an enhanced risk of future diabetes and prediction of future disease in diabetic Egyptian patients. This finding can be used in the prediction, prevention and early detection of the disease especially if the study was applied to large scale.

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