Genes Associated with Cancer, Schizophrenia and Type 2 Diabetes in the Circassian and Chechen Populations in Jordan

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Abstract

Background and Aims: Diabetes afflicts 16% of Jordanian citizens over the age of 18 years and is the fifth main cause of death in Jordan. We aimed to explore single nucleotide polymorphisms (SNPs) identified by GWAS study for potential associations with other diseases.

Methods: We manually searched the National Center for Biotechnology Information for all genes related to the annotated nominally significant single nucleotide polymorphisms (p < 0.05) found in a previous genome-wide association study. This study included 34 diabetes cases and 106 controls for the Circassians and 34 diabetes cases and 110 controls for the Chechens.

Results: Our research revealed 20 genes associated with cancer and 6 genes associated with schizophrenia in the Circassian population, and 2 genes associated with cancer and 7 genes associated with schizophrenia in the Chechen population. These genes may have a pathogenetic association with type 2 diabetes mellitus.

Conclusion: The results from this pilot study demonstrates that multiple genetic factors that underlie type 2 diabetes may be associated with cancer and schizophrenia in the Chechen and Circassian populations in Jordan.

Keywords: GWAS, type 2 diabetes, Cancer, Schizophrenia, Circassian, Chechen.