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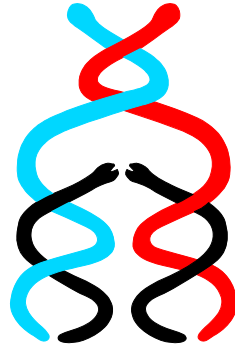
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CONGRESS ABSTRACT BOOK



Turkish Society
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1999

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PP-090

Pleiotropy of cardiovascular and metabolic traits and its interaction with functional loci

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Background/Aim: The present study investigates thirty-six genes involved in relevant biological mechanisms (i.e., lipid metabolism, cardiovascular diseases, hormone metabolism, cellular detoxification, aging, and energy metabolism), lifestyle habits, personal information, and dietary habits pertain to health status and biochemical parameters related to cardiovascular and metabolic traits.

Materials and Methods: Maldi-TOF based Mass Spectrometry was used for genotyping. Bayesian network analysis was performed to investigate the likelihood of different causative models and to identify the model that best explained each interactive cluster.

Results: Considering the genetic information, we observed multiple significant genotype-phenotype associations, which are: *APOE* rs7412 (LDL, $p=0.002$), *GNB3* rs5443 (systolic blood pressure, $p=0.003$), *ADRB2* rs1042714 (triglycerides, $p=0.005$), *IL6* rs1800795 (triglycerides, $p=0.004$; HDL-cholesterol ratio, $p=0.006$). To understand the interactive processes affecting how genetic and non-genetic factors determine complex traits, we used genetic information to identify clusters that include both genetic and non-genetic parameters. On this basis, we detected five independent clusters with genetic and non-genetic parameters related to different complex traits: blood pressure (*GNB3* rs5443, systolic and diastolic blood pressure), glucose levels (*APOA1*, *MTRR*, fasting glucose, glucose, and HbA1C), cholesterol and LDL levels (*APOE*, *ITGB3*, total cholesterol, and LDL), insulin (*LIPC*, *TNF*, insulin resistance, fasting insulin, and uric acid), and triglycerides and HDL levels (*IL6*, triglycerides, and HDL-cholesterol ratio).

Conclusion: This is the first genetic pleiotropy study conducted on the Turkish population that provides data on the interactive mechanisms between genetic and non-genetic factors in complex traits related to health status.

Key Words: interactive mechanisms, genetic pleiotropy, risk factors, population, Turkey.