Familial High-Density Lipoprotein Cholesterol (HDL-C) Deficiency among Palestinians

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Abstract

Background:

Familial HDL deficiency or called familial hypoalphalipoproteinemia (FHA), is a condition characterized by low levels of high-density lipoprotein (HDL) in the blood. People with familial HDL deficiency may develop cardiovascular disease at a relatively young age, often before age 50 years old. The aim of this study was to determine the prevalence of low HDL among young adults aging between (18-25 years old) and the prevalence of familial HDL deficiency.

Methodology:

DNA was extracted from blood taken from 150 healthy Palestinian students from An-Najah National University (ANNU) who had fasted for the previous 10-12 hrs for both biochemical analysis of metabolic profile and DNA extraction. SNPs at rs670CT, rs5069GA and rs1799837CT was tested and detected in certain blood samples.

. Univariate analysis and binary logistic regression were used to determine alleles association with serum HDL-C level and other metabolic abnormalities.

Results:

The prevalence of APOA-I mutation was (38.7%) of all participants, (39.5%, 36.4%) for male and female respectively. Among them (3.3%) was homozygous and (35.3%) was heterozygous. SNP at rs670CT, rs5069GA and rs1799837CT was detected in a prevalence of (79.3%, 10.3%, 6.7%) respectively, no significant association was observed with low HDL level and other metabolic abnormalities ($p > 0.05$). (41.3%) of participants were detected with low HDL level and significant association ($p < 0.05$) was observed between low HDL and hypertriglyceridemia and metabolic syndrome.

Conclusion:

The presence of the mutation was not associated with low HDL levels. Moreover, the presence of the mutation was not associated with any of the metabolic abnormalities. Although, low levels of HDL was associated with hypertriglyceridemia and metabolic syndrome.