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Methylenetetrahydrofolate Reductase C677t Gene Polymorphism and the Association with Dyslipidemia in Type 2 Diabetic Palestinian Patients

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Background: Dyslipidemia in diabetes is common and characterized by hypertriglyceridemia with decreased levels of high-density lipoprotein. The objective of this study was to assess the prevalence of MTHFR C677T polymorphism in Palestinian T2DM patients and to investigate the association between this polymorphism and lipid profile in diabetic patients with and without dyslipidemia.

Study Main Objectives: 1-to assess the prevalence of MTHFR C677T polymorphism in Palestinian T2DM patients 2- to investigate the association between this polymorphism and lipid profile in diabetic patients with and without dyslipidemia.

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Methods: A total of 208 T2DM patients including 98 with dyslipidemia and 110 without dyslipidemia were enrolled in this study. The MTHFR C677T genotyping was conducted by PCR-RFLP followed by agarose gel electrophoresis.

Results: There were no significant differences in either the genotype distribution or allele frequency in T2DM patients with or without dyslipidemia (37.8% CC, 54% CT, 8.2% TT vs. 48.2% CC, 41.8% CT, 11% TT; p = 0.209). However, among the dyslipidemic group, the TT carriers have a higher HDL level (46.8 ± 17.8) compared to (CC+CT) carriers (34.68 + 11.9) (p = 0.01). In the group without dyslipidemia, there was a significant elevation in diastolic blood pressure (DBP) among the CC carriers (83.6 ± 10.6) compared to those who carried at least one mutant allele (CT+TT) (78.1 ± 11.1) (p = 0.009).

Conclusion: The study shows that in our Palestinian population the MTHFR 677TT genotype lowers DBP significantly in patients without dyslipidemia and is related to increased level of HDL in diabetic dyslipidemia patients.

Keywords: MTHFR; C677T SNP; T2DM; dyslipidemia; lipid profile.

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