

Apolipoprotein E Gene Polymorphism and Its Association with Cardiovascular Heart Disease Risk Factors in Type 2 Diabetes Mellitus

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Abstract : Apolipoprotein E (APOE) gene polymorphism has influence on serum lipids which relates to cardiovascular risk. The purpose of this study was to determine the frequency distribution of APOE alleles among Malaysian Type 2 Diabetes Mellitus (DM) patients with and without coronary artery disease (CAD) and their association with serum lipid profiles. A total of 115 patients were recruited in which 78 patients had Type 2 DM without CAD and 37 patients had Type 2 DM with CAD. The APOE polymorphism was detected by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP). The APOE ϵ 3 allele was the most common one in both groups. There was no significant association between the APOE genotypes and the CAD status in Type 2 DM using Pearson χ^2 test. Further analysis indicated there were no significant differences in all lipid parameters between E2, E3 and E4 subgroups in both groups. The study showed that the E4 allele carriers of Type 2 DM with CAD patients had higher LDL-C level and lower HDL-C level compared to the other allele carriers. However, analyses showed these levels were not statistically different. The study also showed that the Type 2 DM with CAD group with E2 allele had higher triglyceride (TG). In conclusion, further study with larger sample size is needed to confirm role of E4 as a marker of CAD among Type 2 DM patients in Malaysian population.

Keywords : Apolipoprotein E, diabetes mellitus, cardiovascular disease, lipids

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