

Association of TNF- α G308A gene polymorphism in essential hypertensive patients without type 2 diabetes mellitus

ABSTRACT

This study aims to investigate the effects of tumor necrosis factor alpha (TNF- α) G308A gene polymorphism on essential hypertension (EHT) with or without type 2 diabetes mellitus (T2DM). The project was conducted on buccal epithelial and blood cells for case and control patients, respectively. Epithelial cells were obtained from the inner part of the cheeks. Techniques including DNA extraction, polymerase chain reaction (PCR), and restriction fragment length polymorphism (RFLP) were utilized to assess biomarkers of DNA damage. Our results demonstrated significant differences between wild and mutated genotypes among EHT patients without T2DM. We also found a significant association between wild and mutated allele frequencies in EHT patients ($P < 0.05$). Clinical characteristics between the groups (EHT with or without T2DM and controls) showed statistically significant association ($P < 0.05$). Overall, we show that G308A polymorphism of the TNF- α gene may be a significant genetic risk factor for EHT without T2DM patients in Malaysia.

Keyword: Association; TNF- α ; G308A; Essential hypertension; Polymerase chain reaction; Restriction fragment length polymorphism