Fas promoter -670 polymorphism and the risk of cervical cancer: a case-control study in multi-ethnic Malaysia

ABSTRACT

Background/Objective: Single nucleotide polymorphism (SNP) is a commonly occurring DNA sequence variation within the human population. The prevalence of these sequence variations differs in various populations and may lead to the suboptimal regulation of genes, including those of the apoptosis pathway. The regulation of cellular death is partially controlled by the interaction between tumor necrosis factor receptor family gene, Fas and its ligand, FasL. A base substitution in Fas -670 A>G (rs1800682) has been found to alter the binding affinity of the Fas protein to its activators, potentially altering its apoptotic potential. The lack of proper apoptosis regulation can lead to a wide plethora of human conditions involving uncontrolled cellular growth such as cancer. The purpose of the study was to investigate whether there was any association between the Fas -670 polymorphism and risk of cervical cancer in multi-ethnic Malaysian women. Methods: Using restriction fragment length polymorphism (RFLP-PCR), Chi-square and logistic regression analysis, this study investigated the Fas -670 SNP and its associations with cervical cancer in the multi-ethnic population of Malaysia. Results: No significant associations were found between Fas -670 A>G SNP and risk of cervical cancer using the genotype model, dominant model and allele frequency model analysis, even after stratification into the Malay, Chinese and Indian ethnic subgroups; and cancer types. Conclusions: Our results showed that the A>G SNP of Fas -670 does not affect the risk of cervical carcinogenesis in Malaysian females.

Keywords: Fas; SNP; rs1800682; Cervical cancer; Malaysia