IMPACT: International Journal of Research in Applied, Natural and Social Sciences (IMPACT: IJRANSS) ISSN (E): 2321-8851; ISSN (P): 2347-4580
Vol. 4, Issue 4, Apr 2016, 21-28

TWO VARIANTS OF MYOC GENES IN PRIMARY OPEN ANGLE GLAUCOMA

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ABSTRACT

Background

Glaucoma comprises a heterogeneous group of optic neuropathies with a complex genetic basis. It is the second leading cause of irreversible blindness in the world affecting more than 60 million people globally. Primary open angle glaucoma (POAG) is the most common type of glaucoma and accounts for half of all cases.

Purpose

This study investigates the association of MYOC gene polymorphisms with POAG in Iraqi population of Al- Najaf Al-Ashraf governorate and to detect the impact of these polymorphisms on intra ocular pressure and cup-disk ratio.

Methods

A case–control study was conducted to find the association of MYOC gene polymorphisms (rs2234926, rs2075648) with primary open angle glaucoma in Iraqi population. The study included 150 patients and 150 controls who attended the ophthalmology unit at Al-Sader medical city and Al-Hakeem hospital in Al- Najaf Al-Ashraf governorate. DNA was extracted from blood and genotyped by PCR-RFLP by using (BsmAI, AvaI) enzyme. To compare the proportion of genotypes and alleles the multinomial logistic regression was applied. The odd ratio was calculated with and without adjustment for age and sex to evaluate risk of developing of POAG.

Result

The results of analysis of the genotype and allele frequencies of MYOC gene polymorphisms (rs2234926, rs2075648) revealed that the homozygous genotype (AA) and heterozygous genotype (GA) were no significantly (P> 0.05) increased the risk of primary open angle glaucoma with respect to those of the wild type (GG) after adjustment for age and sex. The frequency of the A allele of (rs2234926, rs2075648) polymorphisms were no significantly difference between POAG (26%) and controls (24 %). The results also revealed no significant differences in clinical characteristics intra ocular pressure (IOP) and cup-disk ratio (C/D ratio) levels between wild genotype (TT) , heterozygous genotype (TC) and homozygous genotype (CC) in POAG patients (P= 0.6 and P= 0.3) respectively.

KEYWORDS: MYOC Gene Polymorphisms, POAG Patients & Primary Open Angle Glaucoma