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TO ANALYZE THE ANTERIOR CHAMBER ANGLE IN HIGH MYOPIC, USING GOLDMAN THREE MIRROR GONIOSCOPY

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Abstract

Background & Method: 60 eyes of high myopic patients and 60 eyes of general Ophthalmology OPD patients were evaluated at Index Medical College Hospital & Research Centre, Indore from March 2015 to December 2016. All patients were outpatients of the hospital. Each patient included in the study will undergo history taking and complete ophthalmological examination

Result: POAG between high myopic patients and general ophthal OPD patients compared by using Chi-square Test, which found to be statistically significant (P<0.05).

Conclusion: Prevalence of primary open angle glaucoma were increase in high myopic patients. A complete ocular examination including Visual acuity measurement by Snellen‘s chart, Refraction/retinoscopy, Slit lamp biomicroscopy for anterior segment examination, Corrected Intraocular pressure measurement by applation tonometer and CCT, Gonioscopy is done with goldmann three mirror contact lens, Angle is graded according to Schaffer’s grading, All eyes are fully dilated and optic nerve head changes are studied stereoscopically at the slit lamp.

Keywords: Myopic, Gonioscopy, Mirror & Golman.
Study Designed: Prospective Study.

Introduction

Intraocular pressure (IOP) is an established risk factor for POAG[1], and is the only modifiable risk factor for the development and progression of POAG.

Many studies have investigated and reported risk factors associated with glaucoma[2]. Elevated intraocular pressure (IOP) is a well-known major risk factor for POAG[3]. Evidence shows that lowering IOP reduces the risk of development or slows the progression of glaucoma. In addition, there is growing evidence that other risk factors like age, gender, race, refractive errors, heredity and systemic factors may play a role in glaucoma pathogenesis[4].

Many studies found that high myopia has been associated with POAG. It is possible that myopic individuals may be at increased risk for the development of glaucoma[5]. Epidemiologic evidence suggests that high myopia is a risk factor for the development and the progression of glaucomatous optic neuropathy.

The aim of this review is to summarize the evidence implicating high myopia as a risk factor in the pathogenesis of POAG.

Material & Method

60 eyes of high myopic patients and 60 eyes of general Ophthalmology OPD patients were evaluated at Index Medical College Hospital & Research Centre, Indore from March 2015 to December 2016. All patients were outpatients of the hospital. Each patient included in the study will undergo history taking and complete ophthalmological examination including:

Visual acuity measurement by Snellen ‘s chart, Refraction/retinoscopy, Slit lamp biomicroscopy for anterior segment examination, Corrected Intraocular pressure measurement by applation tonometer and CCT, Gonioscopy is done with Goldmann three mirror contact lens. Angle is graded according to Schaffer’s grading, All eyes are fully dilated and optic nerve head changes are studied stereoscopically at the slit lamp with 90 D/ 78D VOLK Lens and direct ophthalmoscope, Visual field defect according to Anderson rule by automated perimetry.

INCLUSION CRITERIA:-

1. Patients with high myopia (>-6.00D).
2. Patients with high myopia (>-6.0D) having clear media.
3. Patient with age group 40-80 years

EXCLUSION CRITERIA:-

1. Patients with evidence of previous ocular surgery (except uneventful cataract surgery), trauma, photocoagulation and cloudy media.
2. Patients with unreliable visual fields (fixation losses >33% or false negative responses >33%);
3. Patients with vitreous inflammation, retinal vessel occlusion, hypertension, diabetic retinopathy or any other retinal pathology.

Results

Table 1: distribution of poag in high myopic and general ophthal opd patient

	disc changes	IOP (>21mmhg)	VF changes	POAG
Present in high myopic patient	9	7	9	9
absent in high myopic patient	51	53	51	51
Total high myopic patient	60	60	60	60
Present in general OPD patient	2	2	2	2
absent in general OPD patient	58	58	58	58
total general OPD patient	60	60	60	60

For POAG-
Chi square value – 4.90
p-value – 0.026, significant
POAG between high myopic patients and general ophthal OPD patients compared by using Chi-square Test, which found to be statistically significant (P<0.05).

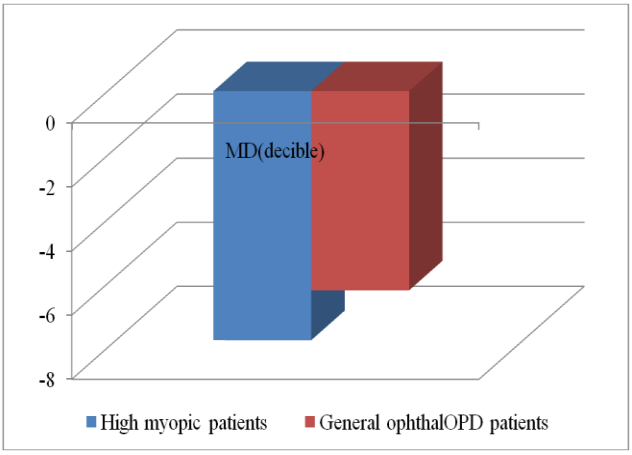

Figure 1: Column chart depicting comparison of visual field mean deviation among high myopic patients and general ophthal OPD patient

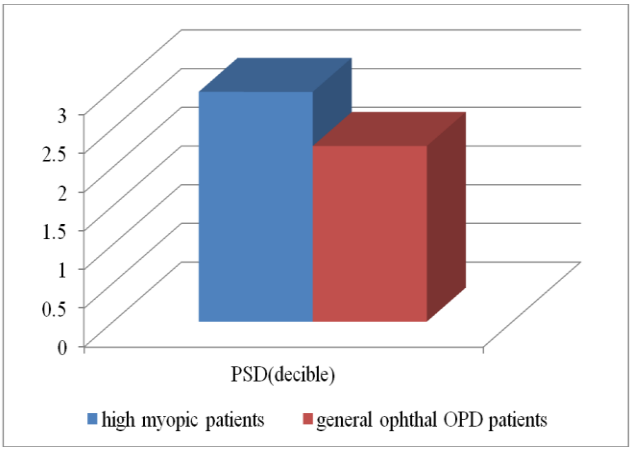

Figure 2: Column chart depicting comparison of visual field pattern standard deviation among high myopic patients and general ophthal OPD patient

Discussion

Following a complete ocular examination including Visual acuity measurement by Snellen‘s chart, Refraction/ retinoscopy, Slit lamp biomicroscopy for anterior segment examination, Corrected Intraocular pressure measurement by applation tonometer and CCT, Gonioscopy is done with goldmann three mirror contact lens , Angle is graded according to Schaffer’s grading, All eyes are fully dilated and optic nerve head changes are studied stereoscopically at the slit lamp with 90 D/ 78D VOLK Lens and direct ophthalmoscope , Visual field defect according to anderson rule by automated perimetry.

The Blue Mountains Eye Study, one of the more frequently cited studies when discussing the association between myopia and glaucoma, after adjusting for age, sex, and other risk factors, found a strong relationship between POAG and myopia, with an odds ratio of 2.3 in eyes with low myopia (between -1.0 and -3.0D) and 3.3 in eyes with moderate-to-high myopia (>-3.0D)[6].

In the Barbados Eye Study, a myopic refraction was one of several risk factors for POAG in adult black people[7].

The Beaver Dam Eye Study showed that, after taking into account the effects of age, sex, and other risk factors, persons with myopia were 60% more likely to have glaucoma than those with emmetropia[8].

Chao et al[9] studied twenty myopic patients of Chinese ancestry (Myopia >6.00 diopters was also found in 30 out of 40 eyes), and did not find axial length to be a risk factor for visual field loss (P>0.99, Freeman-Halton extension of the Fisher exact test) in this patient population. These findings suggest that factors other than progressive lengthening of the eye play an important role in the etiology of glaucomatous appearing optic nerve damage and visual field loss in this specific subset of patients.

Conclusion

Prevalence of primary open angle glaucoma were increase in high myopic patients. A complete ocular examination including Visual acuity measurement by Snellen‘s chart, Refraction/retinoscopy, Slit lamp biomicroscopy for anterior segment examination, Corrected Intraocular pressure measurement by applation tonometer and CCT, Gonioscopy is done with goldmann three mirror contact lens, Angle is graded according to Schaffer’s grading, All eyes are fully dilated and optic nerve head changes are studied stereoscopically at the slit lamp.

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