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Research Article

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Earliest Detection of Asymptomatic Glaucoma (POAG) is Possible, If Patient Has Frequent Complaint of Altered Visual Acuity (V.A) within Last 6 to 8 Months

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Abstract

Purpose: *To determine POAG in those patients have normal morphological fundi, C:D ratio and Neuroretinal rim, IOP may or may not significant rised.*

Background: *At first there are no detectable symptoms except history usually given by patients altered acuity and glasses are not working properly, if this frequently complaint 3-4 times for last 8 months suspicion should developed for POAG.*

Design: *Prospective Cohort study.*

Participant: *Selection of Patients is based upon these factors:*
**Aged >40yrs regardless of gender discrimination.*
**Those have axial length of eye ball 24.0+/- 2.5mm.*
**Three or more consecutive visits to OPD for V.A correction within last 8 month.*

Method: *We performed comphrensive Ophthalmic Examination i-e V.A, Ophthalmoscopy, Biomiroscopy, Gold standard Applanation Tonometry. When Patients have complaint persistant change of glasses without any defined morphology aetiology. We investigated these particular group for RNFL thinkness at OCT and measure thickness RNFL of twice in year.*

Result: *There is variation of RNFL thickness in earliest suspected POAG patient with mean RNFL thickness 0.22 +/-0.1 moderate suspected POAG mean RNFL thickness 0.16 +/-0.12 and with healthy patient mean RNFL thickness 0.23 +/-0.03. All have clinical C:D ratio under range 0.2 to 0.5 and IOP under range of 14 to 18mmhg.*

Conclusion: *We analysed the values thickness of RNFL at OCT along supportive history of frequent complaint altered V.A within last 8 months helps to sort out asymptomatic POAG before development of sign and symptoms associated with thousands of axonal death. Once Glaucoma developed, its hallmark of Irrveresible, Progressive, Permanent loss of vision badly affects quality of life.*

Abbreviation

POAG - Primary open angel glaucoma
RNFL - Retinal nerve fiber layer
VA - Visual Acutiy
IOP - Intraoccular pressure
OCT - Optical coharence tomography
CD ratio - cup disc ratio of optical nerve head

Introduction

Glaucoma is defined as "A multifactorial progressive nonreversible optic neuropathy with characteristic acquired loss of Optic nerve fibers and Intra-occular pressure may or may not rise significantly. It is second frequent reason of permanent blindness irreversible. Primary Open Angel Glaucoma (POAG) can be considered a chronic glaucoma/glaucoma simplex/compensated glaucoma have anatomical patent irido-corneal angel upon gonioscopically. The definitive characteristic of glaucoma is based upon visual field changes when there is 40% RNFL loss has occurred and appearance of disc and retina morphology.

POAG accounts for around 70% of the total glaucoma cases worldwide. Many patients with glaucoma are asymptomatic and do not know they have the disease. In those patients have normal morphological fundi,C:D ratio & Neuroretinal rim, IOP may or may not significant raised is a challenged for diagnosis.

Method

As we know POAG has mild or no symptoms is expected at early stage of disease asymptomatic until the visual field abnormalities become prominent and affect central vision.

This strongly favors an emphasis on early detection, informed consent counseling of glaucoma to patients and health education of staff/optometrist at Sind Government Qatar hospital Karachi Pakistan.

All patients were included in study from screening general ophthalmology O.P.D, those have history usually altered acuity V.A and glasses are not working properly. The type of my study is prospective cohort study and duration was July 2014 and July 2016.

Clinical Criteria

Following factors are considered when we were academically analysed clinically routinely cases. Age above 40 years, male and female equally affected, normal axail length of eye ball ranged has taken 22 to 26 mm. In the specific population of Karachi city upon history and routine examination basis we 5 to 7 patients per day and marked them if they have next visited with same complaint.

Upon second visited we counsel these patients for suspicion and make an appointment at the end of weekend selective day i.e at saturday with these detailed teaching that take off yours job on saturday for full checkup of eye. Bring yours black glasses after examination you may have photophobia in return way, vision may impaired 4 to 6 hours after dialation so be prepared, headache may be occurred or blood pressure fluctuates sometime so there may need to take antihpertensive medication (Usually we used to give tab. Acetazolamide which trade name Diamox 250 mg stat after examination).

Before dialation of pupil, visual acuity and intraoccular pressure determined by gold standard applanation tonometry first. Then after completed dialated/mydiatric eyes selected patients underwent complete detailed Fundoscopy, Slit lamp stereoscopic, Biomiroscopy by 90D lens, Gonioscopy and sometime retinoscope for best acuity correction and make notes over the course of follow-up.

Then if they have still have issues with regard of visual imperfections and glassses again becomes non functional then we reffrered these patients for OCT of macula and optic nerve head to analyse RNFL thickness.

Results

We determined the mean values of RNFL thickness at investigated OCT among true refractive error and POAG earliest cases as:

Healthy Individual (false positive suspicious clinically) have
Rim area 1.66+/-0.22
Rim Vol. 0.43+/-0.7
Mean RNFL thickness 0. 23 +/-0.03
C:D ratio 0.2 to 0.4

Earliest Suspected POAG
Rim area 1.53+/-0.47
Rim Vol. 0.38+/-1.7
Mean RNFL thickness 0.22 +/-0.1
C:D ratio 0.3 to 0.5

Moderate Suspected POAG
Rim area 1.22+/-0.46
Rim Vol. 0.26+/-1.7
Mean RNFL thickness 0.16 +/-0.12
C:D ratio 0.4 to 0.6

Conclusion

Binocular vision masked over unilateral visual defect. Both eyes visual field unit to form single image so field testing by HUMPHERY usually positive with symptomatic patient already has lost 40% RNFL.

If any patient have complaint 3-4 times altered acuity and my glasses are not working after best visual acuity correction within last 6 to 8 months that supportive history click suspicion towards asymptomatic POAG.

All suspicious patient should detailed examine fundus morphology clinically as well as properly investigated RNFL thickness by 90% sensitive and 95% specific OCT (optical coherence tomography as diagnostic tool to sort out asymptomatic POAG [1-12].

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