ORIGINAL RESEARCH PAPER

Medical Science

PRESENTATON OF PATIENT AT THE TIME OF DIAGNOSIS OF GLAUCOMA IN AN OUT PATIENT DEPARTMENT OF A TERTIARY CARE CENTER IN WESTERN INDIA

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MATERIALS AND METHOD

This cross sectional study was conducted between August 2015 to April 2017 on all the patients between age group 20-60 years; who were diagnosed with glaucoma for the 1st time. Detailed history with complete ophthalmological examination including TLE, SLE, Fundus examination, Applanation tonometry, OCT, Perimetry, Undilated Gonioscopy was done and severity of glaucoma assessed as well as managed

RESULTS

342(50.29%) patients were males and 338(49.71%) were females with most common complaint of DOV with headache. Among these 113 presented as case of ACG and required immediate management, 75 were case of NTG and 492 of POAG with average IOP of 35.14mmHg .501 patients showed visual field changes while 632 patients showed increased vCDR with average of 0.68.

CONCLUSION

From these we can conclude that as most of the patients complaint of DOV with headache, a thorough glaucoma assessment should be done in them for early diagnosis and timely management

Introduction

Glaucoma is not a single disease but a group of disorders characterized by a progressive optic neuropathy resulting in a characteristic appearance of optic disc and a specific pattern of irreversible visual field defect associated frequently but not invariably with raised IOP.

It may present in different ways like Primary Open Angle Glaucoma(POAG), Normal Tension Glaucoma(NTG), Acute Congestive Glaucoma(ACG).

POAG ranks as the second most important cause of blindness after cataract, but is the most common irreversible cause of blindness worldwide.[1]

[2]Quigley et al in 2006 projected that by the year 2020 the global burden of glaucoma would exceed 79.6 million with 11.2 million blind from POAG and closed angle glaucoma variants alone.3 POAG were four to five times higher in blacks as compared with whites.[11]

The pathophysiology of this disease continues to be studied, but is characterized by a progressive optic neuropathy with visual field loss and characteristic structural changes, including thinning of the retinal nerve fiber layer and excavation of the optic nerve head, with intraocular pressure (IOP) as the principle modifiable risk factor. This study aims to determine the presentation pattern of patient at the time of their diagnosis as a case of glaucoma for the 1st time in Out Patient Department.

Materials and Methods
Study Design

This is a cross sectional study that involved analysis of 680 patients at M & J Western Regional Institute of Ophthalmology, Ahmedabad, India. All patients between the age group of 20 to 60 years who were diagnosed with glaucoma for the first time between August 2015 to April 2017 were included.

Information collected included basic demographic data, distribution of glaucoma subtypes, intraocular pressures, visual acuity, Slit Lamp Examination(SLE), Gonioscopic Examination, Visual Field(VF), Optical Coherence Tomography(OCT), DVT and Disc Examination was done and severity assessed.

Outcome measures

The principal outcome measure was to diagnose Type of primary Glaucoma with its clinical feature at the time of presentation , which required meeting specific diagnostic criterias .

For the purpose of this study, secondary glaucoma cases were excluded regardless of the mechanism as were patients with infantile or childhood glaucoma or glaucomas secondary to systemic disease processes.

Definitions and Diagnostic Criteria

The diagnosis of Glaucoma conformed to the definition from the Working Group for Defining Glaucomas in Prevalence Studies, also referred to as the International Society of Geographical and Epidemiological Ophthalmology

All cases were either examined or confirmed (having been previously diagnosed by other colleagues) by an experienced ophthalmologist with subspecialty training in glaucoma who performed Perkin's applanation tonometry, SLE done on ZEISS slit lamp, Perimetry performed on OCTOPUS, OCT performed on TOPCON gonioscopy and biomicroscopic disc assessment was done with 78D . All visual acuity data was recorded from a standard Snellen chart at 6 m (20 ft) using the patients best corrected visual acuity (BCVA) and converted to Logmar format for standardized comparisons.

Exclusion criteria

Patients already on glaucoma medical therapy, those with prior ophthalmologic procedures including cataract extraction, laser therapy for glaucoma, or any glaucoma filtering surgery were excluded from this study

Results

Age and sex distribution is shown in Table 1&2. There was a clear association between increasing age and prevalence of Glaucoma with the highest incidence occurring in the 5th and 6th decade.

Table 1:- Age distribution of Patients			
Age group	**Male**	**Female**	**Total**
20-30	28	29	57
30-40	50	53	103
40-50	108	94	202
50-60	156	152	308
Total	342	338	680

Table 2:- Sex distribution of patients		
sex	**Number**	**percentage**
male	342	50.29412
female	338	49.70588
total	680	100

There was no significant difference between the number of men or women afflicted by Glaucoma in this study with 342 men

(50.29%) versus 338 women (49.71%) affected. The average age of subjects was 47.80years +/-10.16 years.

SYMPTOMS OF PATIENT

Complains		
type of complains	number of pateints	%
DOV	541	79.55882
painless	510	75
painful	31	4.558824
Headache	268	39.41176
watering	259	38.08824

Among all patients 79.55% patient complaint of DOV among which 75% were painless

VISUAL ACUITY AFFECTED

Grading of Visual Acuity			
Category	Level	no. of pts	
		RE	LE
Normal	0	225	219
low vision	1	326	328
	2	98	108
blindness	3	27	16
	4	2	7
	5	2	2

The mean BCVA was between 6/18 and 6/24 The average IOP measured prior to any application of therapy was 35.14mmHg+/-9.628 mmHg for right eyes and 35.23mmHg +/-9.482 mmHg for left eyes. The average measured vCDR for both eyes was 0.63+/-0.18. the average CCT for both eyes was 495.33+/-49.81

A total of 75 patients were diagnosed with NTG, defined as IOP <22 mmHg prior to the use of ocular hypotensive medications. Among these 13patients(17.33%) shows increased diurnal variation

A total of 113 patients were diagnosed with a case ofAcute Congestive Glaucoma.

There was no right or left eye predominance or significant difference in gender.

GLAUCOMA GRADING
Among 680 patients 503 patients(73.97%)showed moderate grade glaucoma with Visual Field abnormality in one hemifield and not within 5 degree of fixation. 127 patients(18.67%) showed severe or advanced glaucoma with visual field changes in both hemifields.

Glucoma Grading		
grade	number	Percentage
Mild	50	7.352941
Moderate	503	73.97059
severe	127	18.67647
total	680	100

Discussion
The challenge of preventing vision loss from glaucoma is complicated by an earlier onset, a more aggressive course, a higher presenting IOP and vague symptoms leading to rapid visual impairment before treatment can be initiated.[14] The average IOP for subjects in this study was 35.4 mmHg for right eyes and 35.23 mmHg for left eyes and nearly 64%presented with low vision.

The mean age of diagnosis in this study was 49 years, which closely resembles similar studies in the North Eastern region of Ghana (53.2 years),[12].The percentage of young patients diagnosed at the age of 40 years or younger was 175(25.73%) in this study reflecting the burden this disease poses to younger individuals and the need for improved screening programs to identify at-risk individuals .

There is considerable controversy as to whether NTG represents a distinct disease entity or whether NTG is simply POAG with IOP measured in the statistically normal range.

Some authorities have reported that subjects with NTG are more likely to show focal notching and optic disc hemorrhages - with a possible classification into different subtypes based on appearance - with the explanation that case finding is delayed due to the IOP being measured in the normal range.20, 21. In regards to treatment, the Collaborative Normal-Tension Glaucoma Study (CNTGS) found that lowering IOP at least 30% had a clear protective effect in NTG patients suggesting the responsible etiology may be a vascular insufficiency. Subjects with reduced IOP had reduced visual field progression from 35% versus 12% versus controls.24 This confirmed that IOP plays a clear role in the pathophysiology of this disease, but this failed to explain why some patients continued to progress in spite of well-controlled IOP

Limitations
Evidence was drawn from a single large outpatient referral center and is not fully representative of the entire area. IOP averages may be under or overestimated. This study excluded ocular hypertension and secondary glaucoma patients. Inter-observer and intra-observer variations in vCDR measurements and IOP assessments were present since different ophthalmologists were involved.

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