ORIGINAL ARTICLE

Profile of Patients of Glaucoma In Kashmir Valley (A Hospital Based Study)

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Abstract

A prospective study undertaken to study the profile the various sub types of glaucoma in the Kashmir Valley to document the prevlance and clinical manifestations of the various type of glaucomas was conducted in the glaucoma clinic of the Post Graduate Department of Ophthalmology, Govt. Medical College ,Srinagar, Kashmir. 200 patients (400 eyes) were included. All patients underwent a comprehensive and exhaustive Glaucoma work up to diagnose classify and treatment modalities were suggested. Pseudoexfoliation glaucoma was the largest group of glaucoma patients in the study (40.25%). 29% had POAG.;7.25% had angle closure glaucoma. This is in contrast to most studies in India where this group forms the largest group of all Glaucomas. Male female ratio was 7:3. Females were more affected by angle closure glaucoma. 60% patients had various degrees of glaucomatous optic atrophy on presentation.Early detection, proper training of medical professionals to do a basic IOP examination and fundus examination, awareness about glaucoma is need of hour.

Key Words

Pseudoexfoliation Glaucoma, Primary Open Angle Glaucoma,Primary Angle Closure Glaucoma

Introduction

Glaucoma is a type of optic neuropathy associated with characteristic optic nerve damage which may lead to certain visual field loss patterns at least some part of which is due to a sub optimal intra ocular pressure. Glaucoma is not a single disease process but a large group of disorders characterized by widely diverse clinical and histopathological manifestations. As early as 400 BC in Hippocratic writings glaucoma finds a mention as gliosis in reference to the bluish hue of the affected eye (1). Glaucoma afflicts almost 67 million people world wide of which 10% or 6.6 million are blind.Glaucoma remains the leading cause of irreversible blindness worldwide responsible for 14 % of blindness after Cataract and Trachoma (2). The social and economic impact of this is huge and includes difficulty in seeking employment., mobility , ability to drive, social isolation and depression. The prevalence of glaucoma varies across different populations. POAG accounts for 90% of all glaucomas in blacks and whites and some Asian populations. PACG predominates in south Asian population (1). Risk of blindness from POAG is 5-10% and undiagnosed or pre clinical POAG is the greatest reservoir of preventable blindness in the world where less than 50% of cases have been diagnosed yet (1). As no study to date had been conducted amongst the Kashmiri population.Thus, we undertook this study to see the prevlance of various types of glaucomas in the valley and to compare them to the various studies within India and worldwide.

Material and Methods

The study was conducted in the Glaucoma Clinic of the Post Graduate Department of Ophthalmology, Government Medical College, Srinagar , which is the only Tertiary Care Eye Centre in the Kashmir Valley.The study was a Prospective one in which 200 patients (400 eyes) were studied.

The patients were diagnosed having glaucoma on basis of :

1.Detailed History
2.Comprehensive and exhaustive Ocular Examination
3.Related investigations to substantiate the Diagnosis of Glaucoma and to monitor its progress as well as response to treatment

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History was taken in regard to chief complaints, any history of pain, redness, watering, decrease in vision , frequent change of glasses, colored haloes, photophobia, any history of previous eye surgery, trauma, any laser treatment of the eye, use of topical steroids, any family history of glaucoma, any history of systemic disease like diabetes mellitus, hypertension, asthma etc. Ocular examination included visual acuity and the best corrected visual acuity. Refraction was done where it was indicated. Examination of the eye in diffuse light for any gross abnormality of the anterior segment was done. Slit Lamp Examination was the backbone of the study and the detailed ocular examination for glaucoma was done with a slit Lamp. Fundus examination was done by slit lamp biomicroscopy using a plus 60 D lens. The Optic disc was examined in minute details in regard to its size, cup disc ratio, state of the neuroretinal rim, any hemorrhage on the disc, blood vessels, any peripapillary atrophy etc. The posterior pole was examined with red free light to note early changes of retinal nerve fibre layer in the arcade. Intra ocular pressure was recorded by Goldmanns applanation tonometer and this was used throughout the study. Gonioscopy was done by Goldmanns two mirror gonioscope in all the cases. This helped in classifying the Glaucoma into the various subtypes and to record changes like peripheral anterior synaechia, pigmentation of trabeculum strampollis line, angle configuration, any neovascularisation, PXE material, angle recession etc.Field examination was performed by humphery field Analyser 750i using the SITA programme in selected patients who had good vision and were co operative and analyses of data was performed. P value of < 0.05 was considered significant.

Results

400 eyes of 200 patients were evaluated for glaucoma. Mean age of patients was 56.8 years at diagnosis. Male to female ratio was 7:3. 146(73%) cases were more than 50 years of age. 60% patients had unskilled occupations. 71% were from rural areas and 29% belonged to the urban population (*Fig-1*).

96.5% patients presented with decreased Visual Acuity the commonest presentation as far as the symptoms go.63% patients presented with pain ranging from severe in angle closure glaucoma to moderate/mild in other glaucomas. 30% patients complained of headache and 20% patients had varying degrees of epiphora.75% patients had bilateral glaucoma and 25% had unilateral involvement (*Table-1*).

IOP:31.5% patients had a mean I.O.P of 30 mm at presentation.Highest I.O.P. of 44mm was recorded in phacomorphic glaucoma followed by 36.7mm in neovascular glaucoma. Lowest I.O.P recorded in the study was 15mm in a case of normal tension glaucoma. P.X.E glaucomas had mean I.O.P of 30.3mm. P.O.A.Gs

Fig 1. Demographic Characteristics of Glaucoma Subjects

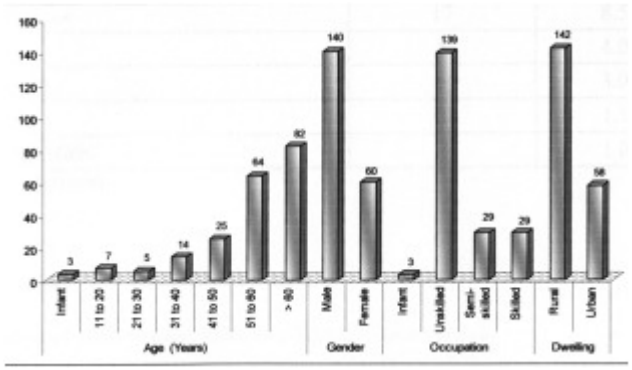


Table-1. Visual Acuity of Studied Subjects

		n	%
Right Eye	6/6 to 6/18	60	30.0
	6/18 to 6/36	40	20.0
	6/36 to 6/60	36	18.0
	PL +Ve, Hand movements & Counting fingers	48	24.0
	PL –Ve	16	8.0
Left Eye	6/6 to 6/18	55	27.5
	6/18 to 6/36	40	20.0
	6/36 to 6/60	37	18.5
	PL +Ve, Hand movements & Counting fingers	52	26
	PL –Ve	16	8.0

n = number of eyes; PL = perception of light

Table-2. Intraocular Pressure observed in Studied Subjects

IOP (mmHg)	Right Eye		Left Eye	
	N	%	n	%
≤ 20	63	31.5	62	31
21 to 30	74	37	82	41
31 to 40	32	16	34	17
> 40	31	15.5	22	11
mean ± SD	28.0 ± 11.8 (8, 70)		27.4 ± 9.9 (8, 64)	

n = number of eyes; SD = standard deviation

Table-3.Gonioscopy Studied in Subjects

Gonioscopy	Right Eye		Left Eye	
	n	%	n	%
Open	180	90.0	176	88.0
Narrow	6	3.0	9	4.5
Closed	14	7.0	15	7.5

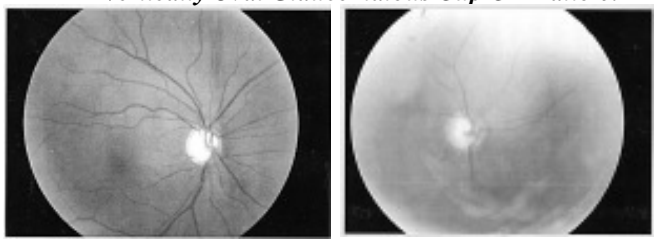
n = number of eyes

Table-4. Final Diagnosis of Glaucoma

Diagnosis	Right Eye		Left Eye		Total	
	n	%	n	%	n	%
Normal	26	13.0	24	12.0	50	12.5
PACG	14	7.0	15	7.5	29	7.25
POAG	57	28.5	59	29.5	116	29.0
JOAG	2	1.0	3	1.5	5	1.25
Traumatic Glaucoma	2	1	6	3.0	8	2.0
Neovascular Glaucoma	4	2.0	2	1.0	6	1.5
Phacomorphic Glaucoma	3	1.5	1	0.5	4	1.0
Steroid Induced Glaucoma	7	3.5	6	3.0	13	3.25
NTG	1	0.5	1	0.5	2	0.5
Congenital Glaucoma	3	1.5	3	1.5	6	1.5
Pseudo Exfolative Glaucoma	81	40.5	80	40.0	161	40.25

n = number of eyes; Total number of eyes = 400

Fig2&3. Showing Glaucomatous Cup CD Ratio 0.8 and Vertically Oval Glaucomatous Cup CD Ratio 0.7



had mean I.O.P of 27.6mm.The difference in mean IOP in different subtypes of Glaucoma was statistically significant ($p<0.05$) (*Table-2*). *Disc changes*: 69% had CD ratio between 0.4 to 0.8 , 14 % had CDR of > 0.9. *Gonioscopy* : 90% open angle;3% narrow angle & 7% closed Angle.(*Table-3*) *Field Changes :*18% had mild field loss, 49% moderate field loss and 33% showed advanced field loss.

Types of Glaucoma (*Table-4*) : 40.25% patients had pseudoexfoliation glaucoma, the commonest glaucoma found in our study.29% patients had primary open angle glaucoma; 7.25% angle closure glaucoma;1.25% juvenile glaucoma; 2% traumatic glaucoma; 3.25% steroid induced glaucoma;1.5 % congenital glaucoma;1% had lens induced glaucoma;1% had neovascular glaucoma and 0.5% had normal tension glaucoma.

Management: 53% were managed by medical treatment.37% underwent glaucoma filtering surgery (Trabeculectomy) mostly in PXE glaucoma.10% patients underwent laser iridotomy for PACG.

Discussion

Glaucoma is a major public health problem in the world causing immense damage in terms of economic terms and irreversible blindness if left undiagnosed and untreated That glaucoma is not a single disease entity of raised I.O.P only but a complex disorder is well known. Glaucoma is characterized by widely diverse clinical and histopathological manifestations, leading to gradual visual loss in a majority of cases which unfortunately is irreversible and permanent. Despite its myriad of presentations glaucoma is still diagnosed by a thorough clinical examination, raised I.O.P, disc Changes, field Changes, loss of retinal nerve fibre layer, being the mainstay of the diagnosis. As raised intraocular pressure is the only treatable factor in glaucoma known to us at present it can be lowered by medical means, laser treatment or surgery. Hollow & Graham in 1966 (3) concluded that 33% of glaucoma patients had P.O.A.G and 0.28% of the general population in Britain had glaucoma. This is close to our observation where 29% of our glaucoma patients had P.O.A.G. Our study showed that PXE glaucoma formed the largest group of glaucoma prevalent in the Valley ie 40.25% of all the patients studied by us.

This is close to a study by Moreno-Montanes *et al* (4) according to which PXE glaucoma was present in 44.5% of open angle glaucomas in Spain. According to them visual field loss was more in PXE glaucoma as compared to POAG. Various other studies show the prevalence of PXE glaucoma as 1.6 %, 5.2%,7.5% & 13% respectively (5-8). Aravind *et al* (9), Lindblom & Thorburn (10) observed that the incidence of PXE glaucoma was as high as 50% of glaucoma patients in Sweden.The incidence of PXE glaucoma in our study is higher than any study done in India and this could be attributed to climatic or genetic factors.

POAG was the second largest group of glaucoma in our study comprising 29% of the patients of glaucoma.. Various studies put the incidence of P.O.A.G between 27% , 37% & 41% (11-13).P.A.C.G constituted a mere 7.25% of patients in our study. This is totally in contrast to most studies done in India where P.A.C.G especially Chronic P.A.C.glaucoma constitutes the largest sub type of glaucoma. Our study shows that P.A.C.G (7.25%) is not a very common glaucoma sub type in our population and this could be again due to genetic differences.

Traumatic glaucoma constituted 1.75% of our glaucoma patients, mostly due to road traffic incidents and sports injuries.Congenital glaucoma accounted for 1.5% of our cases, all being bilateral and presenting within six months of their life.Aponte *et al* found the incidence of childhood glaucomas to be 2.29% most of which were developmental glaucomas and a very few were primary (14)

Conclusion

A significant feature of this study was that that 8% patients presented with no perception of light in at least one eye meaning that the patient had suffered extreme optic nerve damage without realizing it. Early detection, proper training of medical professionals to do a basic IOP examination and fundus examination, awareness that glaucoma and cataract can co exist in the same patient and that gradual painless visual loss around 5th decade of life could be due to glaucoma. It is mandatory for everybody above the age of 40 to have IOP checked once a year especially if there is any risk factor for glaucoma like diabetes mellitus, myopia, family history of glaucoma, prolonged use of topical steroids etc.

References

1. Shields MB, Ritch R, Krupin T. Classification of Glaucomas: Shields M.B The Glaucomas vol2 .fifth edition St Louis Mosby; 1996 .pp. 717-25
2. Lahren William J, Samuelson Thomas W : Pseudo Exfoliative Glaucoma:Yanoff M, Duker Jay S.Ophthalmology Vol 2 Second Edition, Mosby; 2004: pp 1499.
3. Hollows FC,Graham PA. IOP and Glaucoma suspects in a defined population. B.J.O 1966; 80:570.
4. Moreno Montanes J , Alvarez S. PXE Glaucoma in North West Spain. *Acta Ophthal* 1990; 68:695.
5. Cashwel LF. Shields MB PXE Syndrome, prevalence in S.E US population . *Arch Ophth* 1988;106:335.
6. Tarek M, Ihab Hawary, Wael Menawy.; Prevalence of Glaucoma types and legal blindness from glaucoma in Western region of Saudi Arabia a hospital based study . *International Ophthalmology* 2008 ; 1573-1580.
7. Ramakrishnan R, Nirmalan PK, Krishnadas R, Thulasiraj RD, Tielsch JM, Katz J . Glaucoma in a rural population of South India. The Aravind comprehensive eye survey. *Ophthalmology* 2003 ;110(8) 1484-90
8. Nirmalan PK, Krishnadas R, Thulasiraj RD, *et al*. PXE in rural population of southern India .*Am J Opth* 2003 ;1365(6) :830-37.
9. Aravind H, Raju P,Paul PG, *et al*. PXE syndrome in south India. *Br J Opth* 2003 87:1321-1323.
10. Lindblom B, Thorburn W. Observed incidence of glaucoma in Halsingland Sweden. *Acta Ophth* 1984; 62:217.
11. Dandona L, Dandona R, Srinavas M, *et al*. Open Angle Glaucoma in an urban population of Southern India the Andhra Pradesh eye disease study. *Ophthalmology* 2000 ;107(9): 1702-09.
12. Das J,.Bhomaj S,Chaudari Z,Sharma P, Negi A, Dasgupta A. Profile of Glaucoma in a major Eye Hospital in North India. *Ind.J Opth* 2001 ; 49(1);25-30.
13. Jacob A, Thomas R, Koshi SP, Brangaza A . Prevalence of Primary Glaucoma in an Urban South Indian Population. *Ind J Opth* 1998 ; 46(2); 81-86.
14. Aponte EP, Diehl N, Mohney BG. *I*ncidence and clinical characteristics of childhood glaucoma: a population-based study. *Arch Ophthalmol* 2010; 128(4): 478-82