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PROFILE OF PATIENTS OF GLAUCOMA IN JAMMU PROVINCE (A HOSPITAL BASED STUDY)

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Abstract

Background: Glaucoma comprises group of disorder which cause damage to the ganglion cells and optic nerve fibers resulting in permanent loss of vision. Glaucoma is a silent killer of vision, the only treatable factor is IOP which can be lowered by medical means, laser treatment or surgery.

Objectives: The objective of the study was to see profile of patients of glaucoma in jammu province.

Material and method: The present prospective study involved 200 patients was conducted in the out-patient department of ophthalmology at tertiary care hospital of North India. After meeting inclusion & exclusion crieteria the patients underwent detailed clinical history, general examination, complete ophthalmological examination including dilated fundus examination, intra ocular pressure measurement, gonioscopy etc was done to diagnose different types of glaucoma.

Results: Maximum number of patients i.e.128 were seen in age group of ≥50yrs followed by 60 in 41-50 yrs. Males i.e. 127 outnumbered females in present study. Total of 139 were from rural area. Maximum patients complain of diminution of vision ie 180 followed by pain in 135. Vision of 6/24-6/18 i.e. 59 (R/E) & 57 (L/E) followed by PL to <6/60 in 48(R/E) & 47(L/E) patients whereas PL absent was seen in 12 patients. Gonioscopically angle was open in 172(R/E) & 174(L/E) patients. Total of 102 patients had POAG.

Conclusion: From present study we may conclude that glaucoma problem was more common in elderly age group and in males. It can lead to loss of vision among patient who suffer extreme optic nerve damage without realizing it. Therefore, for everybody above the age of 40years, it is mandatory 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.

Keywords: Glaucoma, Gonioscopy, Intraocular Pressure(IOP), Visual acuity.

Introduction:

A chronic, progressive optic neuropathy which is caused by group of ocular conditions which lead to damage of optic nerve with loss of visual function by killing retinal ganglion cell is glaucoma. The strongest known risk factor for glaucoma is high IOP but to induce neuropathy high IOP is neither necessary nor sufficient.[1] Glaucoma cause irreversible blindness, it is responsible for 14% of blindness worldwide, of whom 10% are believed to be bilaterally blind. Optic nerve damage is irreversible and it is imperative to detect glaucoma early so that visual morbidity can be avoided.[2] About 50-90% of the glaucoma cases remain undiagnosed whereas majority of cases are diagnosed at an advanced stage of the disease. One of the probable reason for the late presentation which significantly increase the risk of glaucoma blindness is the lack of awareness about glaucoma. In early diagnosis of glaucoma eye health education is significant step that influences people to take part in regular ophthalmologic care. Population who are at maximum risk for developing the disease need to be recognized and targeted.[3] Of all glaucomas in blacks, whites & some asian populations POAG accounts for 90%. In south asian population PACG predominates. From POAG risk of blindness is 5-10% and POAG is the greatest reservoir of preventable blindness in the world in undiagnosed or preclinical where less than 50% of cases have been diagnosed yet.[4] Due to chronicity, insidious nature of disease, closed follow up is required by patients throughout life. A good baseline evaluation and record of all parameters-intraocular pressure, perimetry, optic nerve head evaluation and gonioscopy over the year should be available for proper management. It is important to collect data in order to identify patients at risk and to monitor their management. Even where the

incidence is low, regular collection of data helps to identify high-risk patients and to confirm that they are being managed appropriately. Monitoring of glaucoma patients is associated with a reduction in the incidence of blindness due to glaucoma.

Material and method:

The present prospective study involved 200 patients over a period of 1 year was conducted in the out-patient department of ophthalmology at tertiary care hospital of North India. The informed consent from all the participants were undertaken before inclusion in the current study. The data was recorded by independent observer.

Inclusion criteria: Patients of age ≥20 yrs, either sex, patient having symptoms of gradual painless loss of vision, pain, blurred vision, redness, frequent changes of presbyopic glass, amid dilated oval pupil, symptoms related to eyes but routine cause is not found or routine treatment is not responding, history of glaucoma/family history of glaucoma, any previous surgical procedures (trab, iridotomy/iridectomy) undertaken on the eyes, trauma, past glaucoma diagnosis.

Exclusion criteria: Patient not willing for enrolment, anterior segment pathology precluding the visualization of angle e.g. Any corneal opacity.

The patients were diagnosed having glaucoma on basis of :

1. Detailed history

2. Complete ocular examination

3. Related investigations to substantiate the diagnosis of glaucoma and to monitor its progress as well as response to treatment.

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. Examination of the eye in diffuse light for any gross abnormality of the anterior segment was done. Slit Lamp Examination, Fundus examination was done by slit lamp biomicroscopy using a plus 78D 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 applanation tonometer, Gonioscopy was done by Goldmanns two mirror gonioscope in all the cases which 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.perimetry was also performed to see field defects.

Statistical analysis: The data was analysed using statistical software MS Excel / SPSS version 17.0 for windows. Data presented as number as discussed appropriate for quantitative & qualitative variables.

Observation & Results:

Glaucoma is responsible for 14% of blindness worldwide, it is imperative to detect glaucoma early so that visual morbidity can be avoided. Glaucoma cause irreversible blindness by causing permanent optic nerve damage.[2]

Table no.1 shows out of total 200 patients maximum number i.e.128 were seen in age group of ≥50yrs followed by 60 in 41-50 yrs. Males i.e. 127 outnumbered females in present study. Total of 139 were from rural area.

Table no.2 shows that maximum patients complain of diminution of vision ie 180 followed by pain in 135. Pain was mild in nature except in angle closure glaucoma where it was very severe in nature.

Table no.3 shows that maximum patients had vision of 6/24-6/18 i.e.59 (R/E) & 57 (L/E) followed by PL to <6/60 in 48(R/E) & 47(L/E) patients whereas PL absent was seen in 12 patients.

Table no.4,5,6 shows out of total 200 patients, IOP >21-30 was seen in 84(R/E) & 81(L/E) while IOP of >40 was seen in 21(R/E) & 23(L/E). Regarding disc changes: 118 had CD ratio between 0.4 to 0.6 & 80 patients had CD ratio of >0.6. When gonioscopy was done, angle was open in 172(R/E) & 174(L/E) patients.

Table no.7 shows out of total 200 patients maximum number i.e. 102 had POAG followed by 54 who had secondary glaucoma.

Table 1: Demographic characteristics of studied subjects

Characteristics	**Number of studied subjects**
Age (in years)	
≤40	12
41-50	60
≥51	128
Sex	
Males	127
Females	73
Residence	
Rural	139
Urban	61

Table 2: Frequency of symptoms among studied subjects.

Symptoms	**Number of studied subjects**
Diminution of vision	180
Redness	52
Pain	135
Frequent change of glasses	96
Any other Complain	56

Table 3: Best corrected visual acuity of studied subjects.

Visual Acuity	**Right Eye (no.)**	**Left Eye (no.)**
PL absent	12	12
PL to <6/60	48	47
6/60-6/36	42	44
6/24-6/18	59	57
6/12-6/6	39	40
Total	200	200

PL-perception of light

Table 4: Distribution of IOP among studied subjects.

IOP	Right Eye (n)	Left Eye (n)
≤20	53	57
>21-30	84	81
>31-40	42	39
>40	21	23
Total	200	200

Table 5: Shows C: D ratio changes among studied subjects.

C:D ratio	**Number of studied subjects**
0.4-0.6	118
>0.6-0.8	40
>0.8-optic atrophy	42
Total	200

Table 6: Gonioscopy in studied subjects.

Gonioscopy	Right Eye (n)	Left Eye (n)
Open	172	174
Closed/Narrow	28	26
Total	200	200

Table 7: Final diagnosis of glaucoma among studied subjects.

Diagnosis	Number of studied subjects (n)
NTG	12
POAG	102
PACG	24
Ocular Hypertention	8
Secondary glaucoma	54
Total	200

NTG=normal tension glaucoma, POAG=primary open angle glaucoma, PACG-primary angle closure glaucoma

Discussion:

Glaucoma is a silent killer of vision[2] & a major global health problem in causing immense damage in terms of economy and causing irreversible damage to vision if not diagnosed and not managed adequately. Glaucoma comprises group of disorder which cause damage to the ganglion cells and optic nerve fibers resulting in permanent loss of vision. Numerous equipment based on advanced technology is available but basic assessment is of optic disc, nerve fiber layer, visual field and IOP, however the only treatable factor is IOP which can be lowered by medical means, laser treatment or surgery.[5]

In the present study out of total 200 patients maximum number i.e.128 were seen in age group of ≥50yrs followed by 60 in 41-50 yrs. Srivastava VK in his study showed that majority of the glaucoma patients were from age >60 i.e. (28.12%) followed by 50-60 (21.87%).The problem of glaucoma is more prevalent as the age increases which could be because of the associated condition like hypertension and diabetes.[5]

Males i.e. 127 outnumbered females in present study. Srivastava VK in his study showed that majority of the patients were male 65.62 % followed by females i.e 34.37% in his study.[5] Yadav RS et al in a study of 193 patients found that 106(54.9%) were males and 87 (45.07%) were females.[2]

Total of 139 patients were from rural area in the present study. This might be due to reason that many patients from urban area may visit private

practitioner during evening hours whereas patients coming from rural far flung area has to go back so came GMC, so that they should be checked early. Rashid W et al in their study found that 71% were from rural areas and 29% belonged to the urban population.[6]

Maximum patients complain of diminution of vision ie 180 followed by pain in 135 in present study. Pain was mild to moderate in nature except in angle closure glaucoma where it was very severe in nature. Rashid W et al in their study found that 96.5% patients presented with decreased visual acuity followed by 63% patients presented with pain ranging from severe in angle closure glaucoma to moderate/mild in other glaucomas.[6]

In the present study maximum patients had vision of 6/24-6/18 i.e.59 (R/E) & 57 (L/E) followed by PL to <6/60 in 48(R/E) & 47(L/E) patients whereas PL absent was seen in 12 patients.The cause for absent PL was glaucomatous optic atrophy. Rashid W et al in their study found that PL was absent in 16 patients in their study.[6]

Out of total 200 patients in the present study, IOP >21-30 was seen in 84(R/E) & 81(L/E) while IOP of >40 was seen in 21(R/E) & 23(L/E) patients. Higher IOP is one of the factor which causes diminution of vision & pain in our patients. Soni P et al in their study found that 52 eyes (45.61%) had IOP in the range of 25-29 mmHg while 48 eyes (42.10%) had IOP in the range of 30-34.[7]

About 118 patients in the present study had CD ratio between 0.4 to 0.6 & 80 patients had CD ratio of >0.6. Soni P et al in their study on 114 eyes found that 32 patient had C:D ratio of 0.6 whereas 30 patient had C:D ratio 0.7.[7] Rashid W et al in their study found that 69% had CD ratio between 0.4 to 0.8 , 14 % had CDR of > 0.9.[6]

In the present study when gonioscopy was done angle was open in 172(R/E) & 174(L/E) patients. Rashid W et al in their study found that gonioscopically : 90% open angle;3% narrow angle & 7% closed Angle.[6] Srivastava VK in his study found that majority of the patients were having open angle glaucoma i.e. 64.06% followed by Close angle/ narrow angle in 35.95.[5]

Out of total 200 patients in the present study maximum number i.e. 102 had POAG wheras PACG was seen in 24 patients only. Among all secondary glaucomas i.e 54, pseudoexfoliative glaucoma(44) form largest number followed by phacomorphic(2), neovascular(2) & others(6) . The prevalence of POAG increases with age i.e. after 50years.[2] The prevalence of angle closure glaucoma increases substantially with age as lens thickness increases with age and may be an important explanation for the progressive shallowing of the anterior chamber and increased prevalence of PACG observed in older age groups.[8] Srivastava VK in his study showed that majority of the patients were having open angle glaucoma (64.06%); 35.95% cases had narrow angle/ angle closure. The most common associated factors with glaucoma patients were diabetes (18.75%) followed by systemic hypertension (14.06%); phacomorphic (7.81%); post iridocyclitis (4.68%); steroid induced glaucoma (3.12%); traumatic glaucoma (3.12%). In 45.31% no associated factors were detected.[5] Hollow & Graham in 1966 reported that 33% of glaucoma patients had P.O.A.G. [9] Yadav RS et al in their study found primary angle closure glaucoma is more common (44.5%).[2] Palimker A et al. in their study showed the prevalence of glaucoma was 3.68% in district of Chhattisgarh. The percentage of primary open angle glaucoma was 13.1%, primary angle closure glaucoma was 21.29%, secondary glaucoma was 21.2%, ocular hypertension was14.5%.[10] Rashid W et al in their study found that 29% of patients had P.O.A.G. In their study PXE glaucoma formed the largest group of glaucoma prevalent in the Valley ie 40.25% of all the patients studied.[6] Moreno-Montanes et al also found in their study 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.[11] Various other studies show the prevalence of PXE glaucoma as 1.6 %, 5.2%,7.5% & 13% respectively[12-15] while the incidence of PXE glaucoma was as high as 50% of glaucoma patients in Sweden.[16,17] The incidence of PXE glaucoma observed by Rashid W et al in their study was 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 their study comprising 29% of the patients of glaucoma.[6] Various studies put the incidence of P.O.A.G between 27% , 37% & 41%.[18-20]

Perimetry was done only in 158 cases & field changes vary from no field loss to mild- moderate-advanced field loss. Proper management (medical/surgical) of all the patients were done depending upon the type of glaucoma & all the patients were explained about their disease & advised to come for regular check up.

Limitation of study: Congenital glaucomas were not included in the study

Conclusion: From present study we may conclude that glaucoma problem was more common in elderly age group and in males. It can lead to loss of vision as seen in present study perception of light was absent in 12 patients which means the patient had suffered extreme optic nerve damage without realizing it. Therefore, proper training of medical professionals to do a basic IOP measurement & fundus examination, awareness that glaucoma & cataract can co exist in the same patient & gradual painless visual loss could be due to glaucoma, all these can help to prevent vision loss in glaucoma patient by early detection & proper management.

Recommendations: Authors recommend that for everybody above the age of 40years, it is mandatory 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. Also awareness in the community should be created by various programs about glaucoma, by providing detailed disease related information to patients, likesymptoms, prevention, management etc.

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