

ORIGINAL ARTICLE

Prevalence of Normal Tension Glaucoma (NTG) in Peshawar

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ABSTRACT

Aim: Prevalence of Open angle glaucoma with normal intraocular pressure in Peshawar**Methodology:** It is a cross sectional study. It is done at Physiology Department, Khyber Medical College, Peshawar in collaboration with Ophthalmology deptt. Khyber Teaching Hospital, Peshawar**Study period:** six months**Sample size:** 394 cases attended the department of Ophthalmology, Khyber Teaching Hospital Peshawar. Out of 394 patients, 100 patients were included in this study.**Results:** There were 33(33%) males and 67(67%) females in the study. There were 27(27%) patients lying in the age range of 35-45 years, 46(46%) were in 46-55 years and 27 (27%) patients of 56-65 years. The mean age of patients was 51.21 ± 8.12 . All patients were with normal tension glaucoma. There were 29(29%) cases who had a positive family history of glaucoma. The "mean IOP" of the eye on the right side was 17.15 ± 1.78 mmHg and the "mean IOP" of the eye on the left side was 17.30 ± 1.94 mmHg.**Conclusion:** Prevalence of normal tension glaucoma (NTG) was 25.4% in Peshawar and its surroundings. Most of the patients were elderly females and 29 (29%) cases had a positive family history of glaucoma.**Keywords:** Open angle glaucoma, normal tension glaucoma, prevalence

INTRODUCTION

Normal tension or low tension glaucoma is a condition that damages the optic nerve and associated visual field (VF) loss with a normal or low IOP¹.

About 0.5-1% of subjects with high pressure might develop glaucoma each year, if they are followed up for a period of about 5-10 years. Though studies have put glaucoma at the second place for causing permanent blindness in the world, its incidence is declining now-a-days. It accounts for <1%. This may be due to modern techniques of perimetry and ophthalmoscopy to find and eradicate the disease^{2,3}.

The objective of the study was to find out prevalence of Open angle glaucoma with normal intraocular pressure in Peshawar

METHODOLOGY

This cross sectional study was conducted in Physiology Department of the Khyber Medical College Peshawar for a period of six months after approval from IRB. Study was done on 394 cases, who attended the department of Ophthalmology of Khyber Teaching Hospital Peshawar. Out of these, 100 cases fulfilling the inclusion criteria were selected. Sample Technique used was non probability Consecutive sampling. Patients within 35-65 years of age, both genders with normal intraocular pressure, open drainage angles and no secondary reason for glaucomatous neuropathy were included. Optic neuropathy caused by other diseases, like diabetes or tumours,

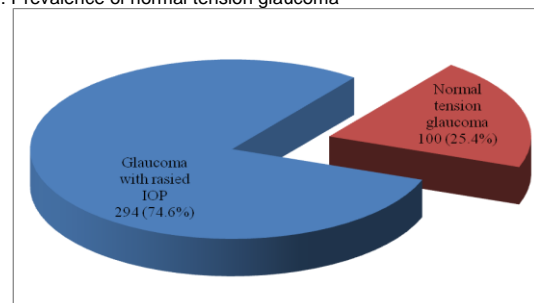
developmental or traumatic diseases of the eye, eyes treated medically, surgically or through laser in the past and cataract bearing eyes were excluded from the study.

Data Collection Procedure: Out of the total 394 cases, 100 cases fulfilling the inclusion criteria were included. Demographic information (name, age, gender, contact) of every patient was obtained after obtaining informed consent. Clinical examination was done on every patient to observe the presence of glaucoma, type of glaucoma and to measure the intraocular pressure. All this information was recorded on Performa. Data was entered and analyzed by using SPSS version 10.

RESULTS

The detail of results is given in tables 1,2,3,4,5 and Fig. 1, 2. A total of 394 cases with glaucoma, attended our department during the six months. Out of them 100(25.4%) cases had normal IOP. So the prevalence of NTG in our hospital at Peshawar was 25.4%.

Fig 1: Prevalence of normal tension glaucoma



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Table 1: Age of patients

Age (Years)	N	100
	Mean	51.21
	SD	8.12
	Minimum	35
	Maximum	65
	Range	30

Table 2: Age WRT gender

Gender		Male	Female
Age (years)	N	33	67
	Mean	49.55	52.03
	SD	9.13	7.51
	Minimum	35	35
	Maximum	65	65
	Range	30	30

Table 3: Patients in different age groups

Age (years)	n=	%age
35-45	27	27.0%
46-55	46	46.0%
56-65	27	27.0%
Total	100	100.0%

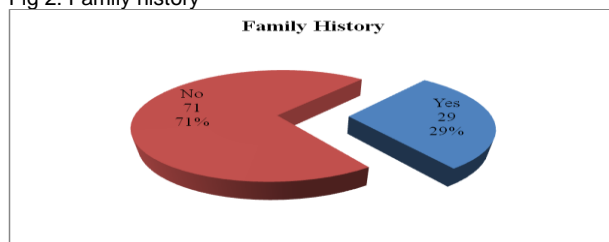
Table 4: IOP (mmHg) WRT the involved eye

IOP (mmHg)	Right eye	Left eye
N	100	100
Mean	17.15	17.30
SD	1.78	1.94
Minimum	12	12
Maximum	20	20
Range	8	8

Table 5: Gender distribution WRT IOP

Gender		Male	Female	p-value
IOP R/E in mmHg	N	33	67	0.016
	Mean	16.55	17.45	
	SD	2.06	1.55	
	Minimum	12	13	
	Maximum	20	20	
	Range	8	7	
IOP L/E in mmHg	N	33	67	0.001
	Mean	16.27	17.81	
	SD	2.23	1.57	
	Minimum	12	12	
	Maximum	20	20	
	Range	8	8	

Fig 2: Family history



DISCUSSION

About 8.4 million people worldwide are bilaterally blind due to this disease. It is second leading cause of bilateral blindness. Classical range for the prevalence of glaucoma is about 2.4% to 5%⁴.

Our study included 394 cases of open angle glaucoma and among these cases normal tension

glaucoma was present in 25.4% cases, while raised IOP was present in 74.6% cases. These results agree with the results of a Pakistani study which was conducted at Karachi and the prevalence of NTG was found to be 22%⁶.

The mean age of patients was 51.21±8.12 years. The minimum age we observed was 35 years while maximum age was 65 years. 46(46%) cases were in the age range of 46-55 years which are significantly maximum. This showed that glaucoma is common in >40 years of age in our population. In our study, we noted that there were 33(33%) males and 67(67%) females. The male-to-female ratio was observed as 1:2. There were more females involved as compared to males. This is also consistent with the results quoted in literature⁴.

In one study, age accounts to be the most important risk factor for the development of glaucoma. The prevalence of open angle glaucoma is found to be 4-10 times higher in the older age groups as compared to the persons in their early forties⁵. The prevalence of glaucoma in people >40 years was 1.7% for Caucasians and 5.6% for African Americans in the Baltimore Eye Survey studies⁷.

For people aged 60 or more, the prevalence of glaucoma in Latinos becomes similar to the prevalence in African Americans. The prevalence of POAG in people aged 52-85 years was found to be 1.7% in the Framingham Eye Study⁸.

CONCLUSION

In this study, the prevalence of NTG was 25.4%. Most of the patients were elderly females and 29 (29%) cases had positive family history of glaucoma.

Conflict of interest: Nil

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