

RATIO OF MALES AND FEMALES SUFFERING FROM NORMAL TENSION GLAUCOMA (NTG) IN PESHAWAR AND NEARBY LOCALITIES

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ABSTRACT

Objective: To explore and identify the percentage of male and female patients suffering from NTG in Peshawar and nearby localities.

Materials and Methods: The study was organized at the Physiology Department of Khyber Medical College (KMC), Peshawar, with the help of the Ophthalmology Department of Khyber Teaching Hospital (KTH), Peshawar, for six months. Both male and female patients age 35-65 years, who attended the outpatient department with normal IOP, open drainage angle, cupped discs and loss of neural rim, visual field defects consistent with glaucomatous damage, and no other secondary cause for glaucomatous neuropathy, were included in the study. Modern, sophisticated tools and techniques were used to diagnose normal-tension glaucoma (NTG).

Results: As a total, 394 patients were investigated during six months duration. Among them, 100 patients (mean age 51.21 ± 8.12 years) satisfied the induction criteria. It was a preplanned set plan that the study would be getting complete when 100 patients meet the set criteria. Among them, there were 33(8.4%) males and 67(17%) females. The IOP in both eyes of male patients was lower than those of female patients, respectively. In both cases (males and females) and their corresponding both eyes, the difference was significant statistically ($P < 0.05$).

Conclusion: It was resolved that the prevalence of NTG is not as uncommon as believed earlier, and it was further resolved that the female NTG sufferers are more than male sufferers, as indicated in our study.

Keywords: Peshawar, normal-tension Glaucoma, nearby localities

INTRODUCTION

Glaucoma is a branch of eye disorders usually characterized by high than normal intraocular pressure (IOP), harming the optic disc gradually leading to vision loss,¹ whereby Glaucoma is regarded as the second major reason for vision loss throughout the

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world which affect women and Asians in a disproportionate manner.² However, normal-tension Glaucoma (also called normal pressure glaucoma or low-tension glaucoma) is an interesting type of open-angle Glaucoma where optic disc damage does occur despite IOP remains within normal limits. Still, until now, no one is sure about its cause.³ This feature that IOP exists within normal levels in NTG makes it challenging to diagnose. On this basis, the authors of the current study believe that this silent and disastrous eye foe may be missed very easily by clinicians and eyecare professionals while dealing with patients facing eye problems. "Normal tension glaucoma (NTG) is labeled when typical glaucomatous disc changes, visual field defects, and open anterior chamber angles are associated with intraocular pressure (IOP) constantly below 21 mmHg".⁴ Several years ago, it was generally accepted that this type of Glaucoma is not very common. Still, a study conducted in 1992 showed that about one-third of patients of Glaucoma might be labeled as NTG patients.⁵ In another study, it was opined that NTG prevalence in Japan is as high as two-thirds of all Japanese glaucomatous patients are suffering from NTG.⁶

Therefore, the purpose and objectives of the current study were not only to explore the existence of the disease in Peshawar and contiguous localities but also to identify the percentage of male and female patients suffering from NTG for comparison. The data was analyzed on SPSS version 17.

MATERIALS AND METHODS

The study was organized at the Physiology Department of Khyber Medical College (KMC), Peshawar, with the help of the Ophthalmology Department of Khyber Teaching Hospital (KTH), Peshawar, for six months. Both male and female patients with age 35-65 years, normal IOP, open drainage angle, cupped discs and loss of some neural rim, visual fields defects in their eyes in line with glaucomatous damage and with no other secondary cause for glaucoma neuropathy who visited the out-patients' department (OPD), were listed for the survey. All those patients who did not fulfill the criteria mentioned above and with optic neuropathy caused by either diabetes mellitus, any sort of tumor, eye traumatic diseases, medically or surgically treated eyes, cataracts or other generalized obvious medical complications were not included in the assignment.

Each patient was made well aware of the procedure and then passed through a general physical checkup, visual acuity assessment, and eye field estimation by a perimeter, Humphrey 720i, Visual Field Analyzer, for any visual field defect. Afterward, proparacaine (Alcaine Eye Drops 0.5%) and tropicamide (Mydracil Eye Drops 1%) eye drops were instilled into the eyes of each patient (as recommended) to prepare them for an eye examination. Then the eyes of each patient were examined through a slit lamp (model TOPCON SL-3C) and ophthalmoscope (Model Keeler Vista 20) to assess and judge the fundus and optic disc cupping of the eyes if any. Tonometry (with tonometer model Haag-Streit AT 900) to find out IOP and gonioscopy (with gonioscope model Haag-Streit EG Berne) to know the angle of the eyes of each patient were performed.

RESULTS

The study was designed in a way that the survey would get stopped whenever 100 patients would be diagnosed and available to fulfill the criteria. This goal was achieved in approximately six months after examining and screening 394 patients. Their mean age was 51.21 ± 8.12 years. The selected NTG patients make 25.4% of the total patients investigated (in an earlier study 7 of our country where the overall frequency of NTG among suspected cases of primary open-angle Glaucoma (POAG) was 22%). The male patients comprised 33(8.4%), and the female patients were 67(17%) of the total patients screened during the study. Figure 1 shows that the IOP in both eyes of male patients was lower than those of female patients. We found that in both of the cases, the difference (by comparing the corresponding IOP of males with females) was statistically significant ($P < 0.05$).

In case of right eyes, we found that 28% male and 65% female patients were suffering from mild to moderate disc cupping and 5% males and 2% females have gross disc cupping while in case of left eyes 32% male and 66% female have from mild to moderate disc cupping and 1% males and 1% females were suffering from gross disc cupping. These figures are shown in Table 1. The figure highlights that the number of female patients suffering from mild to moderate disc cupping was slightly more than double the number of male patients. It also shows that the number of patients with gross disc cupping is not very common.

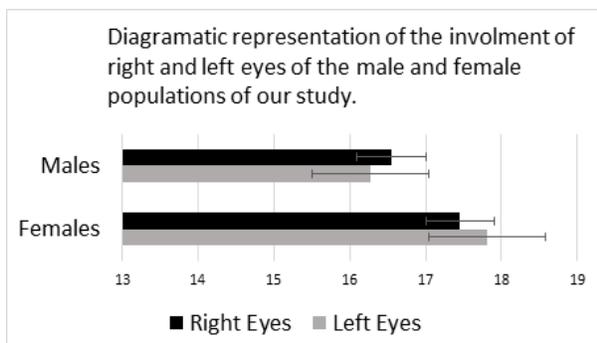


Fig 1:

Table 1: Percentage comparison of right and left eyes of male and female patients

	Males		Females	
	Moderate	Severe	Moderate	Severe
Right Eyes	29%	5%	65%	2%
Left Eyes	32%	1%	66%	1%

DISCUSSION

While publishing a review article, the writers were of the view that the glaucomas are a cluster of advancing optic neuropathies resulting in decay of retinal ganglion cells and leading to changes in the optic disc.⁸ Open-angle Glaucoma is a disease of the elderly population, and the risk factors for this disease can be the age and the sex. Still, NTG is more frequently present than high tension glaucoma (HTG) among the elderly population and females.⁹ The authors of a study were of the views that Glaucoma is a leading cause of irreversible blindness worldwide.¹⁰ To a great extent, the results of our study were in agreement with the study,⁹ where we found that the number of female patients suffering from mild to moderate disc cupping was even more than double the number of male patients. This substantiates that males, as compared to females, are less prone to develop disc cupping. We further found that the patients with mild to moderate disc cupping are more common than the patients suffering from gross disc cupping, and in the former case (soft to medium disc cupping), the females were half that of males.

In another way, we should conclude that males are more prone than females to suffer from gross disc cupping, but to be more careful we should adopt this finding as a general fact only when a considerable population is investigated for this purpose in a manner as we searched for in our study. This is because our study population, as well as our sample sizes, are

tiny and there are chances that this finding could only be by chance. Moreover, we do not have any proper and valid reason to justify our results for the cause of a good explanation. However, we are of the view that our findings should not be taken less seriously and be considered as a herald by the health and eye care personnel and societies or other organization dealing with eye care jobs in any manner while dealing with a patient suspected of Glaucoma. Moreover, we are further of the opinion that strict care must be exercised when labeling a person to be suffering from NTG or otherwise. The reason behind our caution is that no two persons are exactly agreed on the proper and valid definition of NTG because, in the NTG, the main causative agent, the high IOP, is absent. We found that the variation among the IOP of male and female patients was significant statistically, which on the one hand, may mean that the normal upper limits of IOP are very less than that for females. We suggest that if possible, then in the case of NTG only, the standard limits might be revised once again. The answer to the question may or may not be very simple, but at least our study demonstrates the same. However, before adopting this statement as a fact, very extensive research with a large population is essential to make the report more authentic. Another big question is present among NTG and ocular hypertension,¹¹ why the latter is not causing Glaucoma in some individuals, whereby some individuals with normal IOP do suffer from this ailment.

CONCLUSION

Based on our study, we resolved that the prevalence of NTG is not as uncommon as believed earlier, and it was further resolved that the female NTG sufferers are more in number than male sufferers, as indicated in our study.

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