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ORIGINAL REREARCH

Assessment of Presence of Glaucoma among patient visited for eye examine: An observational study

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ABSTRACT:
Background: The present study was undertaken for assessing the presence of Glaucoma among patients visiting for eye examination. **Materials & methods:** A total of 350 subjects who reported for eye check-up were enrolled. Ophthalmologists measured ocular pressure and best corrected visual acuity. After dilating the pupil the fundus was examined. The field of vision was also tested. Gonioscopy was performed to determine type of glaucoma. Complete demographic and clinical details of all the patients were obtained. Separate analysis of the suspected Glaucoma patients was done. **Results:** Glaucoma was present 14.85 percent of the patients. Mean age of the patients with Glaucoma and without Glaucoma was 59.3 years and 34.8 years respectively. 67.31 percent of the patients with glaucoma were males while 52.35 percent of the patients without glaucoma were males. Comorbid condition was present in 57.69 percent and 21.81 percent of the patients with and without glaucoma. Positive family history of glaucoma was present in 40.38 percent and 7.72 percent of the patients with and without glaucoma. **Conclusion:** Under the light of above obtained data, elderly age group, presence of co-morbid condition and presence of positive family history of Glaucoma were significant risk factors of Glaucoma.
Key words: Glaucoma, Examine, Eye

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INTRODUCTION

Glaucoma is a condition of increased intraocular pressure in the eye that may progress to a loss of vision. This results in a characteristic optic nerve head appearance on fundoscopic examination and a corresponding progressive loss of vision. The feature that differentiates glaucoma from other causes of visual morbidity is a characteristic pattern of damage to the optic nerve head. This is most easily recognised at the superior and inferior poles of the optic disc. The vertical cup:disc ratio (VCDR) has proved to be a simple, relatively robust index of glaucomatous loss of the neuroretinal rim. As with intraocular pressure, VCDR is a continuous variable within the population. The intraocular pressure is determined by the balance between aqueous production inside the eye and aqueous drainage out of the eye through the trabecular meshwork. Each normal eye makes about 2 µl of aqueous a minute—that is, about 70 l during the course of a lifetime. Normal intraocular pressure is 10-21 mm Hg, but it can drop as low as 0 mm Hg in hypotony and can exceed 70 mm Hg in some glaucomas.[1- 3]

The rate at which raised intraocular pressure causes optic nerve damage depends on many factors, including the pressure and whether glaucomatous damage is early or advanced. In general, pressures of 20-30 mm Hg usually cause damage over several years, but pressures of 40-50 mm Hg can cause rapid visual loss and also precipitate retinovascular occlusion.[4- 6] Hence; the present study was undertaken for assessing the presence of Glaucoma among patients visiting for eye examination.

MATERIALS & METHODS

The present study was conducted with the aim of assessing the presence of Glaucoma among patients visiting for eye examination. A total of 350 subjects who reported for eye check-up were enrolled. Ophthalmologists measured ocular pressure and best corrected visual acuity. After dilating the pupil the fundus was examined. The field of vision was also tested. Gonioscopy was performed to determine type of glaucoma. Complete demographic and clinical details of all the patients were obtained. Separate analysis of the suspected Glaucoma patients was done. All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software. Chi-square test was used for evaluation of level of significance.

RESULTS

In the present study, a total of 350 subjects were analyzed. Glaucoma was present 14.85 percent of the patients. Mean age of the patients with Glaucoma and without Glaucoma was 59.3 years and 34.8 years respectively. 67.31 percent of the patients with glaucoma were males while 52.35 percent of the patients without glaucoma were males. Comorbid condition was present in 57.69 percent and 21.81 percent of the patients with and without glaucoma. Positive family history of glaucoma was present in 40.38 percent and 7.72 percent of the patients with and without glaucoma.

Graph 1: Incidence of Glaucoma

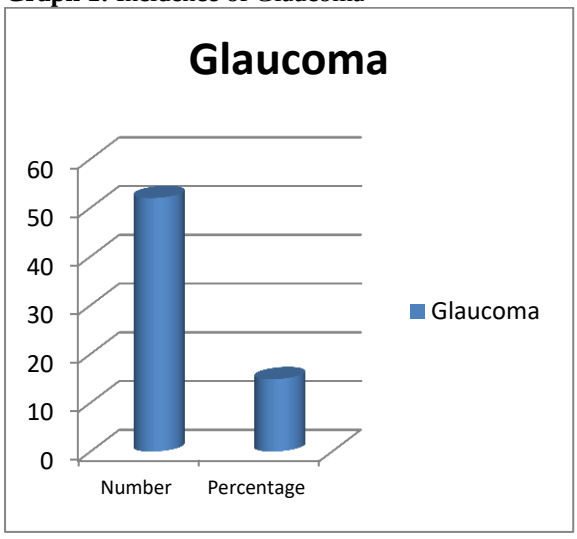

Table 1: Comparison of variables

Variable	Glaucoma patients (%)	Non-glaucoma patients (%)
Mean age (years)	59.3	34.8
Males	67.31	52.35
Co-morbid condition	57.69	21.81
Positive family history of Glaucoma	40.38	7.72

DISCUSSION

Glaucoma, a group of optic neuropathies characterized by progressive degeneration of retinal ganglion cells (RGCs), represents the leading cause of irreversible blindness in the developed world. Typical symptoms include gradual loss of peripheral (side) vision that is followed by progressive loss of central vision. If left untreated, glaucoma can progress to complete blindness. Because the damage to the eye is slow and painless, only half of the carriers are aware of the disease and irreparable harm often takes place long before diagnosis. Glaucoma is generally identified by abnormal regulation of intraocular pressure (IOP) and/or pathological mechanosensitivity of ocular cells but the relationship between mechanical forces and the disease remains enigmatic and a matter of considerable academic, clinical and economic interest.[6- 10] Hence; the present study was undertaken for assessing the presence of Glaucoma among patients visiting for eye examination.

In the present study, a total of 350 subjects were analyzed. Glaucoma was present 14.85 percent of the patients. Mean age of the patients with Glaucoma and without Glaucoma was 59.3 years and 34.8 years respectively. 67.31 percent of the patients with glaucoma were males while 52.35 percent of the patients without glaucoma were males. Palimkar A et al assessed the prevalence of glaucoma in the age group of ≥35 years. Seven thousand four hundred and thirty-eight (87.3%) persons were examined. The age-sex standardized prevalence of glaucoma was 3.68% (95% CI 3.27 to 4.07). Gender variation of glaucoma was not significant. [OR = 1.13 (CI 95% 0.88 to 1.44)] Glaucoma varied significantly by age groups. (X2 = 48.2, degree of freedom = 3 P <0.001) Among those patients diagnosed to suffer from glaucoma, the proportion of open angle, closed angle, secondary glaucoma, ocular hypertension and glaucoma suspects was 13.1%, 21.2%, 21.2%, 14.5% and 30% respectively. Different types of visual disabilities were associated with glaucoma. However, unilateral blindness in glaucoma was unusual. Twenty-five per cent of the glaucoma cases were detected for the first time during the survey. The prevalence of glaucoma was high and the angle closure type was more compared to the open angle glaucoma.[11]

In the present study, comorbid condition was present in 57.69 percent and 21.81 percent of the patients with and without glaucoma. Positive family history of glaucoma was present in 40.38 percent and 7.72 percent of the patients with and without glaucoma. Paul C et al compared the prevalence and types of glaucoma in a rural and urban East Indian population. All subjects underwent a detailed ophthalmic examination at our base hospitals including applanation tonometry, ultrasound pachymetry, gonioscopy, and frequency doubling technology perimetry. Totally, 14,092 individuals participated; 2.7% were detected to have glaucoma in rural arm and 3.23% in urban arm (P < 0.001). In urban population,

2.10% had primary open angle glaucoma (POAG), 0.97% had primary angle closure glaucoma (PACG), and 0.15% had secondary glaucoma. In rural population, 1.45% had POAG, 1.15% had ACG, and 0.10% had secondary glaucoma. HRGS is the largest population-based glaucoma study in India to date with glaucoma prevalence comparable to other landmark Indian studies.[12]

CONCLUSION

Under the light of above obtained data, elderly age group, presence of co-morbid condition and presence of positive family history of Glaucoma were significant risk factors of Glaucoma.

REFERENCES

1. Detorakis E, Symvoulakis E. Over-diagnosed glaucoma: Possible consequences for patients and health care services. Hippokratia. 2011;15:381–2.
2. Kumar RS, de Guzman MH, Ong PY, Goldberg I. Does peak intraocular pressure measured by water drinking test reflect peak circadian levels?.A pilot study. Clin Experiment Ophthalmol. 2008;36:312–5.
3. Vijaya L, George R, Arvind H, Baskaran M, Paul PG, Ramesh SV, et al. Prevalence of angle-closure disease in a rural southern Indian population. Arch Ophthalmol. 2006;124:403–9.
4. Rao GN. Ophthalmology in India. Arch Ophthalmol. 2000;118:1431–2.
5. Raychaudhuri A, Lahiri SK, Bandyopadhyay M, Foster PJ, Reeves BC, Johnson GJ. A population based survey of the prevalence and types of glaucoma in rural West Bengal: The West Bengal Glaucoma Study. Br J Ophthalmol. 2005;89:1559–64.
6. Vijaya L, George R, Arvind H, Baskaran M, Paul PG, Ramesh SV, et al. Prevalence of angle-closure disease in a rural Southern Indian population. Arch Ophthalmol. 2006;124:403–9.
7. Dandona L, Dandona R, Mandal P, Srinivas M, John RK, McCarty CA, et al. Angle-closure glaucoma in an urban population in Southern India. The Andhra Pradesh eye disease study. Ophthalmology. 2000;107:1710–6.
8. Dandona L, Dandona R, Srinivas M, Mandal P, John RK, McCarty CA, et al. Open-angle glaucoma in an urban population in Southern India: The Andhra Pradesh eye disease study. Ophthalmology. 2000;107:1702–9.
9. Jacob A, Thomas R, Koshi SP, Braganza A, Muliyil J. Prevalence of primary glaucoma in an urban South Indian population. Indian J Ophthalmol. 1998;46:81–6.
10. Vijaya L, George R, Arvind H, Baskaran M, Ve Ramesh S, Raju P, et al. Prevalence of primary angle-closure disease in an urban South Indian population and comparison with a rural population. The Chennai Glaucoma Study. Ophthalmology. 2008;115:655–60. e1
11. Palimkar A, Khandekar R, Venkataraman V. Prevalence and distribution of glaucoma in central India (Glaucoma Survey 2001). Indian J Ophthalmol. 2008;56(1):57-62.
12. Paul C, Sengupta S, Choudhury S, Banerjee S, Sleath BL. Prevalence of glaucoma in Eastern India: The Hooghly River Glaucoma Study. Indian J Ophthalmol. 2016;64(8):578-583.

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