Original Article

Clinico- Epidemiological Study of Glaucoma Patients

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Abstract

Introduction: Glaucoma is an irreversibly blinding eye disease which damages optic nerve head fibers. The disease may be asymptomatic in certain clinical types, until advanced stage, so, much emphasis is to be given for early diagnosis. Other types of glaucoma which produces symptoms also needs timely attention before severe visual impairment occurs. Glaucoma is a group of eye diseases which result in damage to the optic nerve and vision loss. **Aims and Objectives**: To study clinical types and Factors associated with the Glaucoma patients. **Methodology:** This was cross-sectional study of the patients attending Ophthalmology Outpatient Department or Admitted to the Ophthalmology In patient Department having symptoms of Glaucoma, at tertiary health care center during the year August 2014 to July 2015. The patients were diagnosed having glaucoma on basis of: Detailed History, Comprehensive and exhaustive Ocular Examination, Related investigations to substantiate the Diagnosis of Glaucoma and to monitor its progress as well as response to treatment. Asper above criteria total 70 patients were included into the study. **Result:** Majority of the Glaucoma patients were from age >60 i.e. (25.71%) followed by 50-60 (21.42%),40-50 (20.00%),30-40 (14.28%),20-30 (11.42%),10-20 (2.85%),<10 (4.28%). As age increases the problem of Glaucoma was more prevalent. Majority of the patients were Male 64.28 % followed by in Females 35.72%. Majority of the Patients were having Open angle Glaucoma in both Rt. and Lt. Eye i.e. 45% and 39% respectively followed by Close angle 20% and 19% and narrow angle was 15% and 12 % respectively in Rt. and Lt. Eye by Gonioscopic study. The most common associated factors with Glaucoma patients were Systemic Hypertension (18.57%) followed by Diabetes(17.14%); Steroid induced Glaucoma (17.14%); Traumatic Glaucoma (12.85%); H/O Iridocyclitis (11.42%); Phacomorphic Galucoma (10.00%). **Conclusion:** The problem of Glaucoma was more common in Older age and in Males. The associated factors with Glaucoma in this study are Systemic Hypertension followed by Diabetes; Steroid induced Glaucoma; Traumatic Glaucoma; H/O Iridocyclitis; Phacomorphic Galucoma. So these factors should be considered while diagnosing and management of Glaucoma patients.
Key Words: Open angle Glaucoma, Close angle Glaucoma, Narrow angle Glaucoma.

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INTRODUCTION

Glaucoma is an irreversibly blinding eye disease which damages optic nerve head fibres. The disease may be asymptomatic in certain clinical types, until advanced stage, so, much emphasis is to be given for early diagnosis. Other types of glaucoma which produces symptoms also needs timely attention before severe visual impairment occurs. Glaucoma is a group of eye diseases which result in damage to the optic nerve and vision loss. A major risk factor is increased pressure in the eye[1]. The disorders can be roughly divided into two main categories: "open-angle" and "closed-angle" (or "angle closure") glaucoma. Open-angle chronic glaucoma is painless, tends to develop slowly over time and often has no symptoms until the disease has progressed significantly. Closed angle glaucoma is usually chronic and asymptomatic but can present all of a sudden as well. This involves sudden eye pain, blurred vision, mid-dilated pupil, redness, nausea and vomiting, resulting from a sudden spike in intraocular pressure from irido-trabecular

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contact. Glaucoma can permanently damage vision in the affected eye, first by decreasing peripheral vision (reducing the visual field), and then potentially leading to blindness if left untreated.[2] Glaucoma is an umbrella term for eye conditions which damage the optic nerve, and which can lead to a loss of vision.[3] The main cause of damage to the optic nerve is intraocular pressure (IOP), excessive fluid pressure within the eye, which can be due to various reasons including blockage of drainage ducts, and narrowing or closure of the angle between the iris and cornea. The main types of Glaucoma are Primary open-angle glaucoma, Narrow angle glaucoma, angle closure glaucoma Normal tension glaucoma, Secondary glaucoma;pseudoexfoliation glaucoma, Pigmentary glaucoma and Primary juvenile glaucoma. Primary open angle glaucoma (POAG) is progressive chronic optic neuropathy in adults in which intraocular pressure (IOP) and other currently unknown factors contribute to damage and in which in the absence of other identifiable causes, there is characteristic acquired atrophy of the optic nerve and loss retinal ganglion cells and their axons [4]. POAG has been associated with risk factors such as central corneal thickness, structure of the optic nerve head, age, genetic factors, race, and intraocular inflammation among others. The global estimate of people with glaucomatous optic neuropathy is 60 million, and 8.4 million are blind from the disease. The highest prevalence of primary open angle glaucoma (POAG) occurs in Africans [5]. A study conducted in the south-west zone showed glaucoma accounted for 11.1% of blindness [6]. Institution-based studies have also indicated the importance of glaucoma as a cause of blindness. A study of 1794 workers in Ibadan confirmed glaucoma in 2.7% [7]. In Benin, 24.7% of 154 patients examined were blind from glaucoma based on visual acuity test, and the figure was higher when visual field criteria were used to define blindness [8]. Narrow angle glaucoma (also closed angle glaucoma) the iris bows forward, narrowing the angle that drains the eye, increasing pressure within the eye. If untreated, it can lead to the medical emergency of angle closure glaucoma. In angle closure glaucoma (also closed angle glaucoma, primary angle closure glaucoma, acute glaucoma) the iris bows forward and causes physical contact between the iris and trabecular meshwork, which in turn blocks outflow of the aqueous humor from within the eye. This contact may gradually damage the draining function of the meshwork until it fails to keep pace with aqueous production, and the intraocular pressure rises. Onset of symptoms is sudden, and causes pain and other symptoms that are noticeable, and is treated as a medical emergency. Unlike open-angle glaucoma, angle-closure glaucoma is a result of the angle between the iris and cornea closing. Tends to occur in the far-sighted, who have smaller than normal anterior chambers, making the physical contact more likely. Normal tension glaucoma (also NTG, low tension glaucoma, normal pressure glaucoma) is a condition where the optic nerve is damaged although intraocular pressure (IOP) is in normal range (12-22mm Hg). At higher risk are those with family history of NTG, those of Japanese ancestry, and those with history of systemic heart disease. The cause of NTG is unknown. Secondary glaucoma refers to any case in which another disease, trauma, drug or procedure causes increased eye pressure, resulting in optic nerve damage and vision loss, and may be mild or severe. It can be due to eye injury, inflammation, a tumor, or advanced cases of cataracts or diabetes. It can also be caused by certain drugs such as steroids. Treatment depends on whether it is open-angle or angle-closure glaucoma. In pseudoexfoliation glaucoma (also, PEX, exfoliation glaucoma) the pressure is due to the accumulation of microscopic granular protein fibers, which can block normal drainage of the aqueous humor. PEX is prevalent in Scandinavia, primarily in those over 70, and more in women. Pigmentary glaucoma (also, pigmentary dispersion syndrome) is caused by pigment cells sloughing off from the back of the iris and floating around in the aqueous humor. Over time, these pigment cells can accumulate in the anterior chamber in such a way that it can begin to clog the trabecular meshwork. A rare condition, it occurs mostly among Caucasians, mostly males in their mid 20s to 40s, most nearsighted. Glaucoma has been called the "silent thief of sight" because the loss of vision often occurs gradually over a long period, and symptoms only occur when the disease is quite advanced.[9] Worldwide, glaucoma is the second-leading cause of blindness after cataracts.[10,11] It is also the leading cause of blindness among African Americans.[12] Although the term "glaucoma" has a history relating to disorders of the eye going back to ancient Greece, in English the word was not commonly used until after 1850, when the development of the ophthalmoscope permitted visualization of the optic nerve damage caused by glaucoma.[13].Of the several causes for glaucoma, ocular hypertension (increased pressure within the eye) is the most important risk factor in most glaucomas, but in some populations, only 50% of people with primary open-angle glaucoma actually have elevated ocular pressure.[14]. Caffeine increases intraocular pressure in those with glaucoma, but does not appear to affect normal individuals.[15] Many people of East Asian descent are prone to developing angle closure glaucoma due to shallower anterior chamber depths, with the majority of cases of glaucoma in this population consisting of some form of angle closure.[16]Other factors can cause glaucoma, known as "secondary glaucoma", including prolonged use

of steroids (steroid-induced glaucoma); conditions that severely restrict blood flow to the eye, such as severe diabetic retinopathy and central retinal vein occlusion (neovascular glaucoma); ocular trauma (angle-recession glaucoma); and uveitis (uveitic glaucoma).

AIMS AND OBJECTIVES

To study clinical types and Factors associated with the Glaucoma patients.

METHODOLOGY

This was cross-sectional study of the patients attending Ophthalmology Outpatient Department or Admitted the Ophthalmology In patient Department having symptoms of Glaucoma, at tertiary health care center during the year Aug 2014 to July 2015. The patients were diagnosed having glaucoma on basis of: Detailed History, Comprehensive and exhaustive Ocular Examination, Related investigations to substantiate the Diagnosis of Glaucoma and to monitor its progress as well as response to treatment. As per above criteria total 70 patients were included into the study.

RESULT

Table 1: Age wise Distribution of the Patients

Age	No.	Percentage
<10	3	4.28
10-20	2	2.85
20-30	8	11.42
30-40	10	14.28
40-50	14	20.00
50-60	15	21.42
>60	18	25.71
Total	**70**	**100**

Majority of the Glaucoma patients were from age >60 i.e. (25.71%) followed by 50-60 (21.42%),40-50 (20.00%),30-40 (14.28%),20-30 (11.42%),10-20 (2.85%),<10 (4.28%). It is clear from table as age increases the problem of Glaucoma is more prevalent.

Table 2: Distribution of the patients as per the Sex

Sex	No.	Percentage
Male	45	64.28
Female	25	35.72
Total	**70**	**100**

Majority of the patients were Male 64.28 % followed by in Females is 35.72%

Table 3: Distribution of the Patients as per the Gonioscopic study

Gonioscopy Study	Rt. Eye No (%)	Lt. Eye No (%)
Open	45	39
Narrow	15	12
Close	20	19

Majority of the Patients were having Open angle Glaucoma in both Rt. and Lt. Eye i.e. 45% and 39% respectively followed by Close angle 20% and 19% and narrow angle was 15% and 12 % respectively in Rt. and Lt. Eye by Gonioscopic study.

Table 4: Factors associated with the Galucoma Patients

Associated factors	No.	Percentage
Congenital Glaucoma	**3**	4.28
H/O Iridocyclitis	8	11.42
Systemic Hypertension	13	18.57
Traumatic Glaucoma	9	12.85
Diabetes	12	17.14
PhacomorphicGalucoma	7	10.00
Steroid-induced Glaucoma	12	17.14
Total	70	100

The most common associated factors with Glaucoma patients were Systemic Hypertension (18.57%) followed by Diabetes(17.14%); Steroid induced Glaucoma (17.14%); Traumatic Glaucoma (12.85%); H/O Iridocyclitis (11.42%); PhacomorphicGalucoma (10.00%).

DISCUSSION

Glaucoma is a major public health problem in the world causing immense damage in terms of economic termsand irreversible blindness if left undiagnosed and untreatedThat 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 andhistopathological manifestations, leading to gradual visualloss in a majority of cases which unfortunately isirreversible and permanent. Despite its myriad ofpresentations glaucoma is still diagnosed by a thoroughclinical examination, raised I.O.P, disc Changes, fieldChanges, loss of retinal nerve fiberlayer, being themainstay of the diagnosis. As raised intraocular pressureis the only treatable factor in glaucoma known to us atpresent it can be lowered by medical means, lasertreatment or surgery. Hollow and Graham in 1966 [17]concluded that 33% of glaucoma patients had P.O.A.Gand 0.28% of the general population in Britain hadglaucoma. In our study Majority of the Glaucoma patients were from age >60 i.e. (25.71%) followed by 50-60 (21.42%), 40-50 (20.00%), 30-40 (14.28%), 20-30 (11.42%),10-20 (2.85%),<10 (4.28%). It is clear from table as age increases the problem of Glaucoma is more prevalent this could be because of the reason that the associated condition like Hypertension and Diabetes becomes more prevalent as the age increases. Majority of the patients were Male 64.28 % followed by in Females is 35.72%. Majority of the Patients were having Open angle Glaucoma in both Rt. and Lt. Eye i.e. 45% and 39% respectively followed by Close angle 20% and 19% and

narrow angle was 15% and 12 % respectively in Rt. and Lt. Eye by Gonioscopic study. The most common associated factors with Glaucoma patients were Systemic Hypertension (18.57%) followed by Diabetes(17.14%); Steroid induced Glaucoma (17.14%); Traumatic Glaucoma (12.85%); H/O Iridocyclitis (11.42%); PhacomorphicGalucoma (10.00%). Our findings are similar to Wasim Rashid *et al*[18].

CONCLUSION

The problem of Glaucoma was more common in Older age and in Males. The associated factors with Glaucoma are Systemic Hypertension followed by Diabetes; Steroid induced Glaucoma; Traumatic Glaucoma; H/OIridocyclitis; Phacomorphic Glaucoma. So these factors should be considered while diagnosing and managing Glaucoma patients.

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