MEDICAL CHANNEL

Original Article

AUDIT OF THE GLAUCOMA CLINIC

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ABSTRACT

Objective: The aim of our study is to determine the frequency of the various types of glaucomas presented in our setup.
Design: Hospital based multicentre descriptive study.
Period: 3 years, from June 2006 to May 2009.
Patients & Methods: About 161 patients who were clinically diagnosed as various types of Glaucoma were registered from the glaucoma clinic conducted once a week in the Department of Ophthalmology. 100 patients at CMC hospital Larkana and 61 patients at Peoples University of medical and health sciences Nawabshah . The disease was diagnosed on the basis of history, clinical examination, ophthalmic examination including visual acuity, slit lamp examination, applanation tonometry, gonioscopy, visual field examination and fundus examination.
Results: In this study of 209 eyes of 161 patients various types glaucoma was diognosed after the complete ophthalmic examination. Among 209 eyes primary open angle glaucoma was seen in 80 (38.27 %) eyes, secondary glaucoma in 70 (33.49 %) eyes, primary angle closure glaucoma 25 (11.96 %) eyes, normotensive glaucoma 18 (8.61 %) eyes, congenital glaucoma 16 (7.65 %) eyes respectively.
Conclusion: In this hospital based descriptive study primary open angle glaucoma was more frequently seen followed by secondary glaucomas and primary angle closure glaucoma.

Key Words Priimary open angle Glaucoma, Primary closed angle Glaucoma, Secondary Glaucoma

INTRODUCTION

Glaucoma has been shown to be leading cause of blindness globally and is a silent killer of vision. The number of people with primary glaucoma in the world by the year 2000 was estimated at nearly 66.8 million, with 6.7 million suffering from bilateral blindness. Glaucoma is the second leading cause of blindness after cataract (16 million) Worldwide, with Asians accounting for approximately half of the world's glaucoma cases.[1,2,3] In recent years, several population based studies in Asia have reported on the prevalence of glaucoma among different racial/ethnic groups, including studies in Chinese, [4,5] Indian,[6,7] and other Asian populations.[8] In general, these studies show that the prevalence of glaucoma ranges from 2.4% to 5%.

The prevalence of glaucoma in adults over 40 years of age has been reported from 2% to 8.8 % in different parts of the world. According to national health survey of Pakistan (1990-94) indicate the prevalence of blindness nationally and is responsible for 3.9% of total blind in Pakistan and according to this study glaucoma is the fourth cause of blindness in Pakistan. [9]

Almost all studies have reported primary open angle glaucoma to be more common.[10,11,12,13] Unfortunately, most patients realize it late, when glaucoma has already progressed more than 40%. The importance of early diagnosis and treatment of glaucoma can not be over emphasized because of the ensuing the structural and functional damages are irreversible.[14] To avoid this, timely diagnosis and immediate treatment is necessary to check the progression of glaucoma. The aim of our hospital based descriptive study is to determine the frequency of the various types of glaucoma presented in our set up.

MATERIAL & METHODS:

The hospital based descriptive study was conducted at the Department of Ophthalmology CMC Hospital Larkana and Peoples University of Medical and Health Sciences Nawabshah from June 2006 to May 2009.

The patients were selected from glaucoma clinic , held once a week at the Department of Ophthalmology. After informed consent of the patients, 209 eyes of 161 patients were included, during the study period, specific proforma for glaucoma were filled, all the relevant data were analyzed and following protocol was followed for diagnosis in all the cases on the basis of .History:.

a. Ocular history e.g. uveitis, aphakia, pseudophakia, trauma, red eye, surgery.
b. Family history.
c. History of medication e.g topical & systemic.
2. Ocular examination
a. Visual acuity: distance and near with correction
b. Slit lamp bimicroscopy (complete anterior segment examination)
c. Applanation.
d. Gonioscopy.
e. Fundus examination.
f. Perimetery.

RESULTS

After complete Ophthalmic examination of 209 eye of 161 patients. The Primary open angle glaucoma was found in 80 (38.27%) eyes of 62 patients range of age was from 40 to 79 years, male were 39 and female 23.

Primary angle closure glaucoma was seen in 25 (11.96%) eyes of 19 patients age ranged from 30 to 79 years, 05 were male and 14 female.

Normotensive glaucoma was found in 18 (8.61%) eyes of 14 patients age ranged from 30 to 69 years, 08 were male and 06 female.

Congenital glaucoma was seen in 16 (7.65%) eyes of 12 patients age ranged from 1 to 16 years, among them 07 were male and 05 were female.

Secondary glaucoma was seen in 70 (33.49%) eyes of 54 patients age ranged from 20 to 69 years, among secondary glaucomas 22 were male and 32 female. 32 eyes (45.71%) were lens induced glaucoma, 14 eyes (20%) pseudophakic, 7 eyes (10 %) pseudoexofoliative glaucoma, aphakic glaucoma 3 eyes (4.28%), 1 eye (1.42%) neovascular glaucoma, traumatic glaucoma 1 eye (1.42%), inflammatory glaucomas 4 eyes (5.71%), failed trabeculectomy 8 eyes (11.42%). Most common cause of secondary glaucoma was lens induced glaucoma.

The distribution of glaucoma with age is shown in table -1.

The distribution of glaucoma with sex as shown in table -2.

DISCUSSION

Glaucoma is the second cause of irreversible blindness world wide[2] and has even been reported as the leading cause in some

TABLE 1.
DISTRIBUTIONS OF GLAUCOMA WITH AGE.

Age (Years)	Congenital Glaucoma	Normotensive Glaucoma	Primary Open Angle Glaucoma	Primary Angle Closure Glaucoma	Secondary Glaucoma	Total
01-16	12	00	00	00	00	12
20-69	00	00	00	00	54	54
30-69	00	14	00	00	00	14
30-79	00	00	00	19	00	19
40-79	00	00	62	00	00	62
TOTAL	**12**	**14**	**62**	**19**	**54**	**161**

TABLE 2.
THE DISTRIBUTION OF GLAUCOMA WITH SEX.

NO	GLAUCOMA TYPES	SEX MALE	FEMALE	TOTAL
1	Primary open angle glaucoma	39	23	62
2	Primary angle closure glaucoma	05	14	19
3	Normotensive glaucoma	08	06	14
4	Congenital glaucoma	07	05	12
5	Secondary glaucoma	22	32	54
	TOTAL	**81**	**80**	**161**

The frequency of various types of glaucomas are shown in table – 3.

The different types of secondary glaucoma are shown in table-4.

TABLE 3.
FREQUENCY OF VARIOUS GLAUCOMAS.

Diagnosis	Number (Eyes)	Percentage (%)
Primary open angle glaucoma	**80**	**38.27**
Secondary glaucoma	**70**	**33.49**
Primary angle closure glaucoma	**25**	**11.96**
Normotensive glaucoma	**18**	**8.61**
Congenital glaucoma	**16**	**7.65**
Total glaucoma patients	**209**	**99.98**

TABLE 4.
DIFFERENT TYPES OF SECONDARY GLAUCOMA.

NO	Types of secondary glaucoma	Number (Eyes)	Total
1	Lens induced glaucoma	**32 (45.71%)**	**32**
2	Pseudophakic glaucoma	**14 (20 %)**	**14**
3	Pseudoexfoliative glaucoma	**07 (10 %)**	**07**
4	Aphakic glaucoma	**03 (4.28 %)**	**03**
5	Neovascular glaucoma	**01 (1.42 %)**	**01**
6	Tramatic glaucoma	**01 (1.42%)**	**01**
7	Inflammatory	**04 (5.71 %)**	**04**
8	Failed Trabeculecty	**08 (11.42 %)**	**08**
	TOTAL		**70**

studies[4].

According to world health organization, it is the third leading cause of blindness in the world, after cataract[1]. The prevalence of blindness in Pakistan is 1.78% (2.5million) based on the National Health Survey of Pakistan (1987-88). Glaucoma is the fourth common cause of blindness nationally and is responsible for 3.9% of the total blindness in Pakistan, an estimated 82.677 cases[9].

The influence of gender on the prevalence of glaucoma has been variable. Glaucoma was more common in males in the central Swedish and the Singapore[4] studies. In contrast, the sicily[15], northern Italy[12] and st. Lucia[16] studies reported a higher prevalence of glaucoma in females. However no significant gender dependent trend was shown in the Melbourne[10] Beaver Dam[17] and Arizona[18] studies.

In our present study the distribution of glaucoma with age and gender is shown in Table-1 in which primary open angle glaucoma is more common in males, while primary angle closure glaucoma is more common in female.

The point to be stressed is that over 80% of affected patients are unaware of the condition. The corresponding figure in the Arizona study[18] was 62%. In developed countries, fewer than 50% of glaucoma patients are aware of their disease. The rate is even lower in developing world[1]. However in our study about 60% of the patients having primary open angle glaucoma were not aware about the condition.

Various studies show that, primary glaucoma comprises 57-90% while secondary glaucoma is 10-25%. The study in Thailand shows the prevalence of primary open angle glaucoma was 67%, primary angle closure glaucoma 21% and secondary glaucoma 12%[19] while study in Urban South Africa shows prevalence of primary open angle glaucoma was 2.9% as compared to primary angle closure glaucoma which was 0.5%[20].

These surveys show that prevalence of primary open angle glaucoma is more, while other studies like Bhomey S and Chaudhry Z et al shows that ratio of primary angle closure glaucoma to primary open angle glaucoma is 63:37.This study was done in a major eye hospital of India[21]. In subcontinent another study labeled as west Bengal glaucoma study show that ratio of primary angle closure glaucoma to primary open angle glaucoma is 1:10[22].

In Africa, where primary open angle glaucoma is more prevalent there is a similar pattern of glaucoma as observed in patients of European decent or blacks residing in Europe. Primary angle closure glaucoma is reported more frequently amongst Asians of Mongoloid origins and oriental races[4,8].

The primary open angle glaucoma is the most common followed by primary angle closure, secondary glaucoma and congenital glaucoma in Pakistan[23]. In our present study frequency of glaucoma is shown in table 3 in which primary open angle glaucoma was found in 80 (38.27%) eyes, primary angle closure glaucoma in 25 (11.96%) eyes, normotensive glaucoma in 18 (8.61%) eyes, congenital glaucoma in 16 (7.69%) eyes. However in our study primary open angle glaucoma was common presentation of glaucoma clinic followed by secondary glaucoma, primary angle closure

glaucoma and congenital glaucoma in the area of upper Sindh. High prevalence of normal tension glaucoma has been reported in studies from Japan[24].

The information on secondary glaucomas is generally limited. Few studies have described secondary glaucoma as a separate entity. Quigley estimated that 6 million people in the world have secondary glaucoma as compared to 67 million who suffer from primary glaucoma[1].In India however it represents about 6% of the total new cases of glaucoma seen annually[25].In some studies, the secondary glaucoma account for 11.8% to 25% of all glaucomas[26]. The causes of secondary glaucoma are mainly cataract, pseudophakia, PXS, aphakia, trauma, uveitis and failed trabeculectomy.

In Pakistan the late presentation of cataract patients, the poor management of diabetes, and other diseases leading to neovascular glaucoma, poor management of chronic uveitis and use of topical steroids, especially in ocular surface allergies, are the possible causes of high prevalence of secondary glaucoma[25]. In our study frequency of secondary glaucoma is 70 (33.49%), in which lens induced glaucoma 32 (45.71%) was common cause of secondary glaucoma, which reflects of the poor compliance of the patient for cataract surgery.

Developmental glaucoma both primary congenital glaucoma or glaucoma associated with ocular developmental abnormalities accounted for 7.65% in our study as compared to 5.7% to 10.9% of total galucomas mentioned by some investgetors.[26].

CONCLUSION:

In this hospital based descriptive study primary open angle glaucoma was more frequently seen followed by secondary glaucomas and primary angle closure glaucoma.

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