GLAUCOMA AMONG TERTIARY HEALTH CARE WORKERS IN MAIDUGURI, NIGERIA.

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ABSTRACT

Background: Glaucoma is the second leading cause of visual loss and blindness in the world after cataract. The devastating effect of this disease is often neglected. Early diagnosis and management is key to the prevention of blindness from glaucoma.

Objective: To determine the prevalence of glaucoma and offer early treatment to the affected members of staff of University of Maiduguri Teaching Hospital.

Method: A cross sectional descriptive study was conducted as part of an awareness campaign to mark the World Glaucoma Week from 10th to 16th March, 2013. A structured protocol was designend to capture the age, sex and educational levels of the respondents. Visual acuity was measured using the standard Snellen's test type by a trained ophthalmic nurse. Detailed ocular examination with pen torch, direct ophthalmoscope and slit lamp was done on each participant. Intra ocular pressure was measured using hand held Perkin's tonometer. All findings were entered into the structured protocol and the data obtained were presented in percentages and tables.

Results: The most common age group was 40-49 years (59.6 %.) The hospital prevalence of glaucoma was 11.9% (34). The mean intraocular pressure of those found to have glaucoma was 21.3 mmHg and 22.1 mmHg for right and left eyes respectively. Among those found to have glaucoma, 2 (5.9%) had secondary glaucoma due to post cataract extraction complications while 9(26.5%) others were known glaucoma patients on medication.

Conclusion: The hospital prevalence of glaucoma was found to be high among staff. Despite their level of education and access to medical facilities, most of those who were found to have glaucoma did not know they have the condition. There is thus, a need for intensifying glaucoma awareness campaign among hospital staff.

Keywords: Glaucoma, Tertiary, Healthcare, Workers.

INTRODUCTION

Glaucoma is the second leading cause of visual loss and blindness in the world after cataract.[1] The World Health Organization estimates that 105 million people are glaucoma suspect, about 13.5 million people over the age of 40 years have primary open angle glaucoma which constitutes 60% of the total burden of glaucoma, 6 million (26.6%) people have primary angle closure glaucoma, 300,000 children (1.3%) have congenital glaucoma and 2.7 million individuals (12.1%) are affected with secondary glaucomas.[2] In Africa, glaucoma accounts for 15% of blindness and it is the region with the highest prevalence of blindness relative to other regions of the world.[3] Most population survey reports indicate that glaucoma occurs more frequently in blacks than whites.[4]

Most existing information on glaucoma blindness in Nigeria is from blindness survey and clinic based studies in various parts of the country.[5] In a clinic based study on causes of blindness in Nigeria, Olurin[6] reported blindness due to glaucoma was 20%. A recent nationally representative population based survey of blindness and visual impairment in Nigeria reported the all-cause prevalence of blindness to be 4.2% among those aged 40 years and older and the proportion of blindness due to glaucoma was 16.7%[7]. However the number of blind is just the tip of the iceberg as there are many more individuals with glaucoma who are at risk of blindness.[3]

The devastating effect of this disease is often neglected. Most people with glaucoma are usually unaware that they have the disease until significant loss of vision has occurred.[8] Blindness from glaucoma is preventable. Early optimal diagnosis and management is key to prevention of blindness from glaucoma. This study was therefore aimed at measuring the prevalence of glaucoma among the hospital staff, and to offer treatment to those affected. To the best of our knowledge no such study was ever done in this area.

METHOD

The study was conducted as part of glaucoma awareness campaign to mark the World Glaucoma Week from 10th to 16th March 2013. During the period of awareness campaign the staff of that voluntarily consented to the study were recruited. The approval of the management and the hospital ethics and research committee for the screening and the study was sought for and obtained. Invitation letters for glaucoma screening to individual departments were issued. A public awareness lecture was organized for the entire hospital staff.

For the purpose of this study glaucoma diagnosis was made when the intra ocular pressure was greater than 21mmHg in the presence of cup-disc (cd) ratio of 0.5 or more or if the respondent was a previously diagnosed glaucoma.

A structured protocol was designed to capture the age, sex and educational levels of the respondents. Visual acuity was measured using the standard Snellen's test type by a trained ophthalmic nurse at 6m/20ft in a well lit area in the clinic. Detailed ocular examination using pen torch, direct ophthalmoscope and slit lamp was done on each participant by any of the five consultant ophthalmologists. Intra ocular pressure was measured using hand held Perkin's tonometer. All findings were entered into the structured protocol. All those who were not serving/retired, spouses or dependants of members of staff were excluded from the study Those who were found to have glaucoma were given appointments to attend the regular clinic for further evaluation and management. The data obtained was analyzed manually and presented using percentages and tables.

RESULTS

A total of 285 respondents were examined and have voluntarily consented to the study. There were 164 male and 121 females with ratio of 1.4:1. The age distribution of the respondents is as shown on table 1. The most common age group was 40-49 years (59.6%). The distribution of the staff seen by professional cadre is as shown in table 2. The most frequent staff seen was among the administrative cadre constituting 26.6% (76) of the study population. The prevalence of glaucoma was 11.9% (34). Table 3 shows the distribution of intra ocular pressure (IOP mmHg) and cup disc (cd) ratio of respondents found to have glaucoma. The mean intra ocular pressure for glaucoma patients was 21.3mmHg and 22.1mm Hg for right and left eyes respectively. Two of those found to have glaucoma had secondary glaucoma due to post cataract extraction complications while 10(29.4%) others were known glaucoma patients on medication.

Table 1: Age group of the respondents

Age (years)	Number	Percentage (%)
< 40	8	2.8
40-49	170	59.6
50-59	84	29.5
60-69	17	6.0
70 and above	6	2.1
Total	**285**	**100**

Table 2: Professions of the respondents

Profession	Number	Percentage (%)
Administrative staff	76	26.6
Nurses	68	23.8
Lab scientists	21	7.4
Engineers/technicians	16	5.6
Medical records	14	4.9
Accountants	13	4.6
Pharmacists	7	2.5
Medical doctors	5	1.8
Store officers	5	1.8
Physiotherapists	2	0.7
Other professional groups eg Drivers, security men, tailoring officers	40	14.0
Did not indicate profession	18	6.3
Total	**285**	**100**

Table 3: Intra Ocular Pressure/Cup Disc Ratio of 34 Respondents Diagnosed with Glaucoma

S/No	Right Eye		Left Eye	
	IOP(mmHg)	cd ratio	IOP(mmHg)	cd ratio
1*	18	0.3	37	No view
2	18	0.5	28	1.0
3**	12	0.7	15	0.7
4*	34	No view	8	No view
5	34	1.0	8	0.9
6	34	0.9	20	1.0
7	21	0.7	27	0.8
8***	19	1.0	15	0.9
9	29	0.7	26	0.6
10	20	0.8	21	0.7
11	23	0.6	22	0.6
12**	14	1.0	12	0.9
13	25	0.5	18	0.2
14	22	0.5	27	0.7
15	26	0.6	22	0.4
16	28	0.3	28	0.6
17***	20	1.0	21	1.0
18**	16	0.7	16	0.5
19	25	0.4	23	0.4
20	26	0.6	24	0.6
21	22	0.5	26	0.5
22	32	0.9	31	0.9
23	22	0.4	48	0.8
24	23	0.6	24	0.6
25	28	0.3	26	0.3
26**	13	0.7	16	0.7
27	11	0.6	27	0.8
28	12	0.3	27	0.7
29**	12	0.7	16	0.7
30**	11	0.7	10	0.3
31	20	0.7	29	0.7
32**	16	0.4	16	0.8
33	29	0.6	26	0.6
34***	10	0.8	10	0.6

***post cataract extraction secondary glaucoma**
****known glaucoma on medication**
*****known glaucoma post trabeculectomy**

DISCUSSION

World Glaucoma Week is recognized annually in the second week of March in order to create and maintain global awareness and initiative for glaucoma control.[4] Early detection of the condition is critical to preventing irreversible blindness in those affected.[9] Glaucoma is the second leading cause of blindness in the world.[10] It affects approximately 1-2% of the population over the age of 40 years and 10% of people age over 70 years.[11] In Africa, glaucoma accounts for 15% of blindness and it is the region with highest prevalence of blindness relative to other regions worldwide [12]. A recent nationally representative population based survey of blindness and visual impairment in Nigeria reported the all-cause prevalence of blindness to be 4.2% and the proportion of blindness due to glaucoma was 16.9% among those aged 40 years and above.[3] In this study the prevalence of glaucoma was found to be 11.9%. Kragha [13] reported prevalence of 8.6% in an eye clinic in Nigeria and Asonye,[14] reported 8.9% in Nigeria. These variations in reports may have been due to differences in diagnostic criteria of glaucoma, sample size and or age of the patients studied.

The devastating effect of the disease is often neglected. Most people with glaucoma are usually unaware that they have the disease until significant loss of vision has occurred [8]. A study by the Glaucoma Research Foundation reported 8.8% of Caucasians and 16.1% of African-Americans were unfamiliar with glaucoma.[15,16,17] About 6% of Americans have glaucoma and only about 50% of those who have glaucoma know that they have it.[18] While Ntim-Amposaah [19] in Ghana reported 94% of the glaucoma cases diagnosed in their series were unaware that they had glaucoma. In this study only 26.5% of those who were diagnosed with glaucoma know that they had the condition. Glaucoma in majority of cases is diagnosed late, mostly after loss of central vision in one or both eyes.[20] This invariably adds up to the high prevalence of preventable blindness.

The relationship between gender and primary open angle glaucoma has been exhaustively discussed although rife with controversies.[14] Hirvela, [21] Armaly[22] reported higher intra ocular pressure levels in females than is found in males.

Age was an important and consistent risk factor, with a higher prevalence of glaucoma associated with increasing age.[3] Eskron [23] showed a glaucoma prevalence of 5.7% in Central Sweden among 760 respondents aged between 65 and 74 years; while Hirvela [21] found 12% among 500 cases aged 70 years or greater. In this study the respondents were predominantly above the age of 40 years, and all those diagnosed with glaucoma were above the age of 40 years.

Conclusion: The prevalence of glaucoma was found to be high among UMTH staff. Despite their level of education and access to medical facilities, most of those who were found to have glaucoma did not know they have the condition. There is thus, a need for intensifying glaucoma awareness campaign among hospital staff.

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