

AETIOLOGY OF BLINDNESS IN BENIN CITY, NIGERIA

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Abstract

Background/purpose: To determine the main causes of blindness in Benin-city, Nigeria.

Method: The medical records of 1,698 new patients attending the consultant outpatient eye clinic of the University of Benin Teaching Hospital between May 2001 and April 2003 were reviewed and the causes of blindness recorded.

Results: One hundred and twenty eight patients (7.54%) presented with binocular blindness while 248 patients (14.6%) presented with unioocular blindness. The major causes of binocular blindness were cataract (34.4%), glaucoma (25%) and age related macula degeneration (8.59%). The main causes of unioocular blindness were cataract (23.79%), glaucoma (22.58%) and trauma (11.69%).

Conclusion: Avoidable causes of blindness remain the leading causes of blindness but age related macula degeneration, which was not reported in earlier studies, is now the third major cause of blindness. Preventive and curative measures should be instituted to tackle the leading causes of blindness.

Keywords: Aetiology, blindness, Benin City

Introduction

The socioeconomic impact of severe visual loss, including the degeneration of one's quality of life, is devastating. The prevention of this devastating disability is therefore of utmost importance to the individual, community and the nation. It has been estimated that the total cost of global blindness is about one fourth to one sixth of the United Kingdom's gross national product.¹

Studies on blindness and visual impairment have primarily used social services, blindness registries, clinic records or selective population-based approaches. In low-vision clinic reports and population-based studies from developed countries, age related macula degeneration (ARMD) is the major cause of blindness and it is regarded as the leading cause of blindness in the Western World.²⁻⁶ However, these reports are predominantly of Caucasian populations. In a recent study in a predominantly nonwhite urban community hospital in Dallas, Texas, Apte et al⁷ reported that of 3,562 subjects examined, ARMD accounted for only 1.3% of blindness. The projected estimates for world blindness points to some 45 million blind, and an additional 135 million visually disabled (low vision).⁸ About 80% of blindness is avoidable (preventable or curable), and 9 out of 10 of the world's blind live in a developing country.⁸

The prevalence of blindness in Nigeria is 1%.⁹ Hospital based studies in Nigeria show that cataract is the most common cause of blindness.¹⁰⁻¹² This study

aims to show the main causes of blindness in Benin City and make comparisons with earlier reports to see if the preventive measures put in place over time have affected the causes of blindness.

Patients and Methods

Medical records from all the new patients who attended the outpatient eye clinic of the University of Benin Teaching Hospital, Benin City from May 2001 to April 2003 were reviewed to identify patients with blind eyes. Blindness in this study was defined as best corrected visual acuity of less than 3/60 or inability to count fingers at 3 meters.

The visual acuity used was what the patient had at presentation. The recorded age was that at first attendance and not of onset of disease. An aetiologic analysis of blindness was performed and classified into eleven categories:⁷ retina, trauma, diabetes, glaucoma, lens, cornea, amblyopia, optic nerve, uveitis, tumour and miscellaneous. Retinal causes encompassed retinal vascular occlusions, retinal detachments, hereditary retinopathies and macular lesions excluding scars from presumed toxoplasmosis. Diabetic causes included mainly the retinal complications. Lenticular causes included cataract, lens dislocation or subluxation, aphakia and couched eyes. Corneal causes included opacities, ulceration, keratopathies and keratoconus. Optic nerve causes included optic atrophy or neuritis. Uveitis included cases of active uveitis and sequelae such as macula

scars. Miscellaneous causes of unilateral blindness included panophthalmitis, phthisis bulbi, microphthalmos and anophthalmos. Miscellaneous causes of bilateral blindness included cortical blindness and microphthalmos.

Results

The ophthalmologic records of 1,698 new patients seen at the outpatient clinic of the University of Benin Teaching Hospital from May 2001 - April 2003 were reviewed. There were 871 males and 827 females (M:F = 1.05:1). The age range was 1 month - 104 years.

A total of 376 patients (22.14%) presented with blindness in at least one eye. There were 222 males (59.04%) and 154 females (40.96%). The peak age incidence was in the seventh decade.

A total of 128 patients (7.54%) presented with binocular blindness and a further 248 patients (14.6%) presented with monocular blindness. The peak age incidence was in the 8th decade. There was generally an increasing incidence of blindness with age.

A total of 504 blind eyes (of 376 patients) were seen. The visual acuity distribution of patients with binocular blindness is shown in table 1. The causes of blindness are shown in table 2. The disorders of the lens were the most common cause of both unilateral and bilateral blindness. Cataract was responsible for bilateral blindness in 44 of the 48 cases and 59 of the 67 cases of monocular blindness. Thus cataract was responsible for 34.4% of bilateral blindness and 23.79% of unilateral blindness. This excludes cases of unilateral cataract due to trauma.

Glaucoma was the second most common cause of both unilateral (22.58%) and bilateral blindness (25%). Most of the cases were due to chronic open angle glaucoma. Retinal causes were the third most common cause of bilateral blindness but the 4th most common cause of unilateral blindness after trauma. Eleven of the 21 retinal cases of bilateral blindness were due to age related macula degeneration. Thus age related macula degeneration was responsible for only 8.59% of bilateral blindness.

Trauma was the third most common cause of monocular blindness after cataract and glaucoma. The sequelae of trauma responsible for blindness include corneal laceration, traumatic cataract, secondary glaucoma, corneal ulceration and opacification, hyphaema and chemical burns.

Table 1: Visual acuity of patients with binocular blindness

Visual acuity	No. (%)	
	Better eye	Worse eye
Counting fingers <3 m	91 (71.10)	51 (39.84)
Hand movement	25 (19.53)	31 (24.22)
Light perception	8 (6.25)	23 (17.97)
No light perception	4 (3.12)	23 (17.97)
Total	128 (100)	128 (100)

Table 2: Causes of blindness in Benin City

Aetiology	No.	
	Unilateral (%)	Bilateral (%)
Retina	25 (10.08)	21(16.41)
Trauma	29 (11.69)	6(4.69)
Diabetes	1 (0.4)	3(2.34)
Glaucoma	56 (22.58)	32(25.0)
Lens	67 (27.01)	48(37.5)
Cornea	25 (10.08)	7(5.47)
Amblyopia	1 (0.4)	0(0.0)
Optic nerve	11 (4.44)	4(3.13)
Uveitis	20 (8.06)	3(2.34)
Tumour	2 (0.81)	0(0.0)
Miscellaneous	11 (4.44)	4(3.13)
Total	248 (100%)	128(100%)

Discussion

The University of Benin Teaching Hospital is the major referral center serving what used to be the midwestern state of Nigeria now comprising Edo and Delta states. However, being a hospital study, only cases that have eye problems will be referred here. There is therefore selection bias and the result will not represent a true community based prevalence of blindness. It will however highlight the main causes of blindness among those with eye problems and give an insight into the effectiveness of blindness prevention programmes.

The proportion of patients who presented with blindness in both eyes was 7.54%, which is far above the estimated national prevalence of 1%, or the results of other recent selective community based studies, which show a prevalence of 2.7% in Kaduna¹³, 0.9% in Anambra state¹⁴ and 1.92% in Ogun state.¹⁵ This is expected because of the selection bias of hospital-based studies.

There were more blind males than females. This may be because more males attended the clinic than females. This is in agreement with an earlier hospital based study at Ibadan¹⁰. There was also an increasing incidence of blindness with age with a peak incidence of bilateral blindness in the 8th decade and for unioocular blindness in the 7th decade of life. This is because the main blinding conditions are age related and the eyes of older people would have suffered more damage over time than those of younger patients. This is similar to the findings of other hospital¹⁰ and community based¹⁵ studies. The major cause of blindness was cataract (34.4% of bilateral blindness and a further 23.79% of unilateral blindness) followed by glaucoma (25% of bilateral and 22.58% of unilateral blindness). Age related macula degeneration was a distant third being responsible for 8.59% of bilateral blindness. These findings are in agreement with a recent similar study at the teaching hospital eye clinic in Anambra state of Nigeria.¹² Both studies are also in agreement that trauma was the third most common cause of unioocular blindness after cataract and glaucoma being

responsible for 11.69% of uniocular blindness in this study. This result is however in contrast to an earlier study in Midwestern state of Nigeria about 3 decades ago where Ayanru¹¹ reported that the major blinding conditions were cataract (33.2%), uveitis (20.4%), chronic simple glaucoma (17.1%) and trauma (7.9%). He also reported that uveitis was the most common cause of uniocular blindness (28.3%), followed by cataract (23.9%), chronic simple glaucoma (13.2%) and trauma (9.9%). This difference may be due to the fact that a leper settlement was visited in his study where the incidence of uveitis is high. The result is also slightly different from another report in Ibadan, 3 decades ago where Olurin¹⁰ reported that the most important specific causes of blindness included cataract (39.3%), primary glaucoma (22.6%), keratitis (9.7%), optic atrophy (6.7%) e.t.c. However, all are in agreement that cataract is the most common cause of blindness which is also the finding of several community based studies in Nigeria.^{14,15}

In conclusion, this study has shown that avoidable causes of blindness such as cataract and glaucoma remain the leading causes of blindness but age related macula degeneration is gradually becoming more important. As avoidable causes of blindness become less important and the quality of life of our people improves, previously uncommon causes of blindness are likely to become more important. Preventive and curative measures should be instituted to tackle the leading causes of blindness.

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