

Etiological Spectrum of Blindness in Patients Attending Visual Disability Assessment Clinic for Blindness Certificate in a Tertiary Care Centre in Tamil Nadu

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Abstract:

Background: Blindness is a major health problem as well as social and economic problem in developing countries like India. Blindness in all forms confers serious morbidity to those affected. The aim was to study the causes of blindness in patients attending visual disability assessment clinic.

Methods: A prospective hospital based study of total of 110 patients of all age groups attending Government Dharmapuri Medical College Hospital for blindness certificates during the period between November 2022 to January 2023 were included. All the patients underwent complete ophthalmological evaluation and information was gathered regarding their demographic profile and nature of ocular disorder whether primary or secondary and laterality. Patients with unilateral as well as bilateral total blindness were included in the study. Blindness was defined according to World Health Organization Criteria.

Results: Out of 110 blind patients, males above 50years were more commonly affected, unilateral involvement more than bilateral and the most common cause was corneal disorders particularly corneal opacity.

Conclusion: In our study, corneal disorders were the major cause of blindness in the patients. Legal blindness is a term defined to determine those who are eligible to receive disability benefits, tax exemption, transport concessions and other eligible monetary benefits.

Keywords: Blindness, Disability, Bio Microscopy, Fundus, Corneal Disorders.

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Introduction

Blindness is a term that includes both low vision and legal blindness. Low vision cannot be fully corrected by conventional methods such as glasses, contact lenses, refractive or any other surgeries. Visual impairment is a functional term defined as the reduced visual function that interferes with the ability of an individual to perform their daily routine activities. It includes both low vision and blindness.

Legal blindness is a term used to determine those who are eligible to receive disability benefits (including monetary benefits), tax exemption and rehabilitation training. A person is considered legally blind if he/she has distance visual acuity of less than 3/60 in the better eye with best correction (using glasses or contact lenses) at a distance, or if he/she has visual field restriction less than 10 degrees from central fixation. If a person with unilateral blindness has progressive eye disease or fellow is affected due to ocular trauma, the individual becomes visually disabled in both eyes. Hence unilateral blindness is included in the

calculation of disability percentage for compensation.

Materials and Methods

Our study was conducted in 110 blind people who attended Visual disability assessment clinic at Government Dharmapuri Medical College for disability assessment and blindness certificates during the period between November 2022 to January 2023. Patients of all age groups with involvement of one eye or both eyes were included in the study.

All patients included in the study underwent visual acuity testing using Snellen's chart for both Distance and near visual acuity. Patient's information was gathered regarding their demographic profile and nature of ocular disorder whether primary or secondary and laterality.

All patients underwent complete ophthalmologic evaluation as follows:

1. Visual acuity by Snellen's chart
2. Refraction

3. Pupillary reaction for normal pupil, sluggish pupil or RAPD.
4. General ophthalmic examination with torch light and slit lamp biomicroscopy
5. Intraocular pressure measurement by non-contact and applanation tonometry
6. Fundus examination by direct ophthalmoscope and slit lamp biomicroscopy using 90 Dioptre lens and indirect ophthalmoscopy.
7. Extraocular movement examination using torch light
8. Colour vision evaluated by Pseudo-isochromatic Ishiharas chart
9. Central fields by Bjerrums screen
10. Visual fields by Automated perimetry

Results

Table 1: Occurrence of blindness in different age and gender groups

Age	Males	Females	Total
0-10 Years	1	2	3 (2.7%)
11-20 Years	13	5	18 (16.4%)
21-30 Years	8	5	13 (11.8%)
31-40 Years	9	2	11 (10%)
41-50 Years	14	3	17 (15.5%)
>50 Years	30	18	48 (43.6%)
	75(68.2%)	35(31.8%)	110 (100%)

Table 2: Laterality of the eye involved

Right Eye	39 (35.4%)
Left Eye	23 (21%)
Both Eyes	48 (43.6%)
Total No Of Cases	110 (100%)
Total No Of Eyes	158

Table 3: Causes of Blindness

Causes Of Blindness	Number Of Cases
Corneal Disorders	53 (33.5%)
Optic Neuropathies Including Glaucomatous Optic Neuropathy	52 (32.9%)
Retinal/Macular Disorders	24 (15.2%)
Phthisis Bulbi	14 (8.9%)
Anophthalmos	6 (3.8%)
Others	9 (5.7%)
Total No: of Eyes	158



Figure 1: LEFT EYE CORNEAL OPACITY



Figure 2: GLAUCOMATOUS OPTIC ATROPHY

Discussion

National Programme for Control of Blindness (NPCB) has been re-designated recently as National Programme for Control of Blindness and Visual Impairment (NPCB&VI). The definition of blindness under the National Programme for Control of Blindness and Visual Impairment (NPCB&VI) has been modified in line with the definition used under the World Health Organization (WHO), i.e., 'presenting distance visual acuity less than 3/60 (20/400) in the better eye or limitation of field of vision to be less than 10 degree from centre of fixation'.

A certificate of Blindness and visual impairment can be issued by the ophthalmologist to any individual who fits the definition of Blindness or Visual impairment. The certificate may be temporary or permanent based on the type of disability. The more external location of cornea predisposes it to vision threatening insults. Corneal disorders are a major cause for blindness worldwide.

In our study, Males (68.2%) were more predominantly affected than females which are possibly related to their lifestyle and occupation. Most common affected age group in our study was more than 50years (43.6%). Most commonly affected eye was right eye (35.4%). Most common causes of childhood blindness in our study were nystagmus with amblyopia, staphyloma, microphthalmos, corneal opacity, retinochoroidal coloboma, optic atrophy and phthisis bulbi.

In our study, corneal disorders (33.5%) were the major cause for blindness. Among the corneal

disorders, corneal opacity accounts for majority of cases. Other corneal causes for blindness were Microcornea, Pseudophakic bullous keratopathy, neovascular glaucoma and corneal graft failure.

Optic nerve disorders (32.9%) including glaucomatous optic neuropathy were the second most cause in our study. Primary optic atrophy, secondary optic atrophy, consecutive optic atrophy, glaucomatous optic atrophy and traumatic optic neuropathy were the causes among optic nerve disorders.

Retinal and macular causes constituted about 15.2% of cases of blindness in our study. Retinitis pigmentosa, chronic retinal detachment, proliferative vitreoretinopathy, retinoschisis, retinochoroidal coloboma, macular dystrophy, Bull's eye maculopathy and macular scar were the retinal causes.

14 eyes (8.9%) were Phthisical eyes. 6 cases (3.8%) were anophthalmic sockets. Other causes of blindness were amblyopia with nystagmus, cortical blindness, Staphyloma and Panophthalmitis.

Corneal opacity due to trauma has been reported as one of the important causes of unilateral visual loss. Males have been reported to have a higher chance of suffering ocular injury compared to females. In a study from South India, corneal injury was identified as a major cause of infective keratitis leading to corneal scarring.

Conclusion

In our study it was concluded that corneal disorders (33.5%) were the major cause for blindness followed by optic nerve disorders constituting

32.9% among patients attending visual disability assessment clinic for blindness certificates. Among the corneal disorders, corneal opacity following trauma accounts for majority of cases.

Males (68.2%) were more predominantly affected than females. Most common affected age group in our study was more than 50years (43.6%). Most commonly affected eye was right eye (35.4%).

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