An epidemiological study of visually disabled patients less than 40 years of age

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Abstract

Background: The human eye is like a camera that used to collect, focus and transmit light through a transparent media to create an image. Vision is one among the five basic special sense of human being. Normal binocular vision is a dynamic process that integrates sensory and motor information to derive meaning of the surroundings.

Vision loss is a threat to human being than any other disability in the present day world. There are many causes for visual disability which includes damage to the eye and the failure of the brain to interpret the information from the eye correctly.

Aim & Objectives: To study the following in patients with visual disability 1. Etiology 2. Magnitude of visual disability

Results: In this study of 156 patients, 31.41% were in the age group of 31- 40 years, 63.46% were found to be males and 42.94% were having 100% visual disability. Retinitis pigmentosa found to be a major cause of visual disability in this study group.

Conclusion: Visual disability may be of varying degree and with the higher prevalence among men in the age group 31 – 40 years due to retinitis pigmentosa. Genetic counseling and testing help to determine individuals at risk. In our study, amblyopia is the commonest cause for visual disability in childhood(1 – 10 years). Hence if it is detected early and managed appropriately, visual disability due to amblyopia is reduced. Early intervention is imperative for rapid acceptance, better compliance with rehabilitation programs and higher standard of living.

Keywords: Visual disability, causes, category/percentage of disability and rehabilitation.

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Introduction

Vision is one among the five basic special senses of human being. Normal binocular vision is a dynamic process that integrates sensory and motor information to derive meaning of the surroundings.

Vision loss is a threat to human being than any other disability in the present day world. There are many causes for visual disability which includes damage to the eye and the failure of the brain to interpret the information from the eye correctly.

The gift to sight is denied to approximately 246 million population globally. About 90% of visual impaired people live in developing country. Visual disability remains a key barrier to socio-economic development.

Aim

Visual disability may be due to many possible causes, but its catastrophe is beyond comparison. It adversely affects the quality of life and emotional well-being of the affected individual and their families. This impairs the productivity of the country. The aim of this study is to assess the magnitude, causes, percentage/ categories of visual disability in less than 40 yrs of age.

Objectives

To study the following in patients with visual disability

1. Etiology
2. Magnitude of visual disability

Inclusion criteria: All patients less than 40 years of age with visual disability.

Exclusion criteria: One eyed patients if vision in better eye is better than 6/60.

Materials & Methods

Individuals less than 40 years of age who came to Thanjavur Medical College, Thanjavur for visual disability certificate from June 2013 to September 2014 were chosen as subjects in this study.

This is a epidemiology study done in 156 patients who satisfy the inclusion criteria.

All patients were subjected to complete ocular examination including visual acuity, slit lamp examination, ophthalmoscopic examination, IOP measurement, gonioscopy, pachymetry and B-scan, visual fields and radiological imaging in selected cases.

Results

In this study of 156 patients, 31.41% were in the age group of 31-40 years, 63.46% were found to be males and 42.94% were having 100% visual disability. Out of 156 cases, 36 patients (23.07%) were having retinitis pigmentosa, 33 patients (21.15%) were having ametropic amblyopia, 16 patients (10.25%) were having phthisis bulbi, 23 patients(14.74%) were having congenital anomaly, 31 patients(19.87%) were having optic atrophy, 11 patients(7.05%) were having strabismic amblyopia and 3 patients(1.92%) were

having vascularized corneal opacity and 3 patients(1.92%) were having macular dystrophy. Retinitis pigmentosa found to be a major cause of visual disability in this study group.

Age Wise Distribution

Age in Years	No. of Cases	Percentage(%)
1-10	41	26.28%
11-20	40	25.64%
21-30	26	16.66%
31-40	49	31.41%

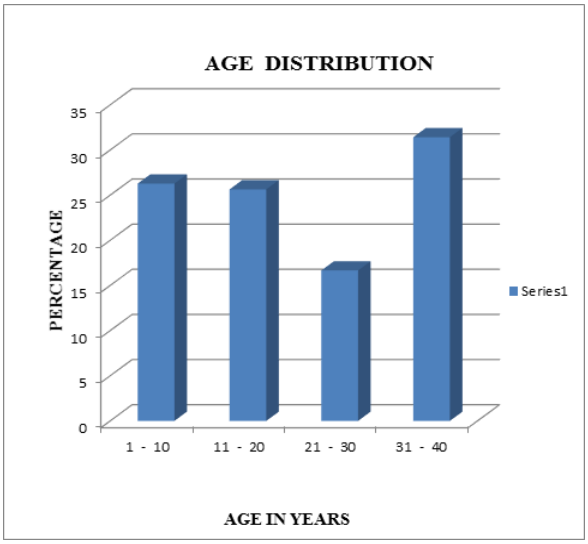

Fig. 1: Age Wise Distribution

Sex Distribution

Sex	No. of Cases	Percentage
Male	99	63.46%
Female	57	36.53%

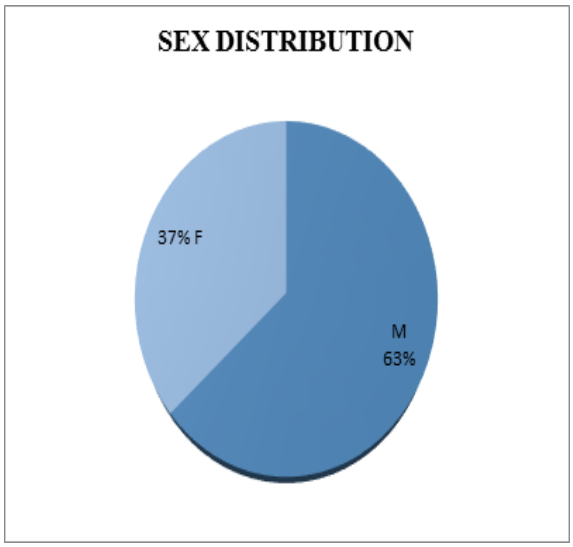

Fig. 2: Sex Distribution

Eye Involvement

Eye Involved	No. of Cases	Percentage
One Eyed	20	12.82%
Both Eyes	136	87.17%

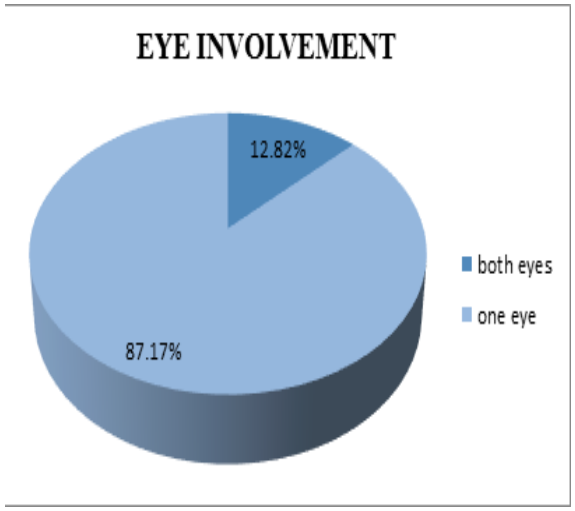

Fig. 3: Eye Involvement

Category of Visual disability

Category	No. of Cases	Percentage
Category I(40%)	17	10.89%
Category II(75%)	52	33.33%
Category III/IV(100%)	67	42.94%
One Eyed(30%)	20	12.82%

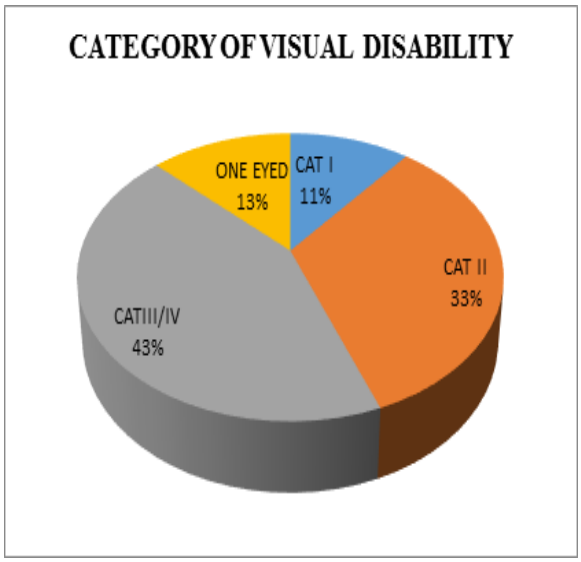

Fig. 4: Category of visual disability

Causes of Visual Disability in 156 patients

Causes	No. of Cases	Percentage
Retinitis Pigmentosa	36	23.07%
Ametropic Amblyopia	33	21.15%
Optic Atrophy	31	19.87%
Congenital Anomaly	23	14.74%
Phthisis Bulbi	16	10.25%
Strabismic Amblyopia	11	7.05%
Vascularised Opacity	3	1.92%
Macular Dystrophy	3	1.92%

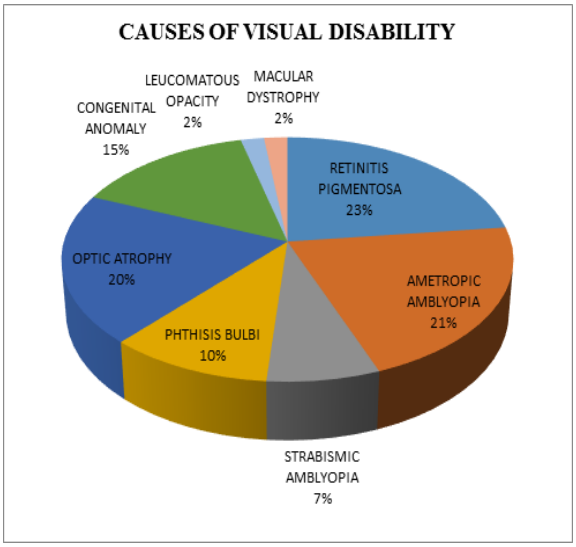

Fig. 5: Disease wise distribution

Discussion

Visual disability at any age has a great impact on the individual and his family. About 2.1% of the total population was living with disability. According to the data collected among the five types of disability, visual disability emerges next to locomotor disability. Visual disability does not mean blindness, with the available rehabilitation services that can help an individual to lead an independent and higher quality of life.

In this study 156 patients with visual disability were analyzed about the pattern of visual disability by age, gender, category and causes in less than 40 years of age. In our study, more even distribution among various age group but more prevalent in 31-40 years of age is comparable to Dandona et al[3] study. Hence over all burden of visual disability is more in younger age in developing countries due to high birth rate and mortality rate. In our study, males were 63.46% and females were 36.53%, while in the study done by Abou-Gareeb I et al[1], females were found to be higher than males due to higher life expectancy and low utilization of eye care services. In our study, 12.82% belong to one-eyed status and 50% were in the age group of 31- 40 years which is comparable to Dandona et al[4] study in 2000.

In our study, retinitis pigmentosa constitute 23.07% and more predominant in the age group between 31- 40 years of age and is comparable to Murty USNa et al[9] study. In our study, uncorrected refractive error were found to be 21.15% and 57.57% were among 1- 10 years of age which is similar to Gupta et al[6] study and Dandona et al[5] study.

In our study, optic atrophy causing visual disability in 19.87% of them and 74.19% were males in the age group between 21–40 years which is similar to Levin L.A et al[8], international optic nerve trauma study.

In our study, congenital anomaly found in 14.74% and more predominant cause of visual disability between 11-20 years of age which is similar to Sao Paulo university study[7] (2006) and Bhattarcharjee et al[2] study.

Conclusion

Visual disability may be of varying degree and with the higher prevalence among men in the age group 31–40 years due to retinitis pigmentosa. Genetic counselling and testing help to determine individuals at risk. In our study, amblyopia is the commonest cause for visual disability in childhood(1–10 years). Hence if it is detected early and managed appropriately, visual disability due to amblyopia is reduced. Early intervention is imperative for rapid acceptance, better compliance with rehabilitation programs and higher standard of living.

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