

Prevalence of Amblyopia in Children Aged from 5-15 Years in Rural Population Kurnool Dist. Andhra Pradesh, India

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Abstract: Study of school children in rural area of Kurnool district by using E chart, streak retinoscope, and subjective correction, the children not improving referred to Govt. Regional Eye Hospital for final diagnosis. Among 180 children 16 were amblyopic due uncorrected refractive error. Among the 16 cases, 6 cases were due meridional, 2 cases were strabismic and 2 cases were ametropic.

Keywords: Schoolchildren, amblyopia, refractive errors.

1. Introduction

Amblyopia⁸ has been defined as a unilateral or bilateral decrease of visual acuity caused by deprivation of pattern vision or abnormal binocular interaction⁸. Even though no cause can be detected by physical examination of the eye, some cases will improve with the treatment clinically; amblyopia is defined by one or more lines difference in visual acuity between the eyes. Amblyopia is one of the common causes of childhood visual impairment. The causes of amblyopia are strabismus, high refractive error, anisometropia⁸ and opacities of the ocular media, or a combination of two or more etiologies in the same patient. In spite of different causes, the basic mechanisms in all cases are either abnormal binocular interaction between eyes or from deprivation in one or both eyes. The upper limit of the critical time when children are most vulnerable to amblyopic disorders is around 8 years in humans (2, 3, 4). Visual loss due to amblyopia can be permanent if corrective measures are not taken in time. The burden of disability due to this problem can become massive when one takes into account the duration of life with visual disability (5, 6). Early detection of refractive error defect and strabismus and ocular causes will prevent from amblyopia. Simon observed that screening for strabismic, refractive and ocular diseases conditions directly associated with Amblyopia is clearly proven. 'Stager suggested that Amblyopia is one of the most common eye problem in children. Early treatment can eliminate Amblyopia'.¹²

2. Material and Methods

We analyzed 29,351 school children in government schools in Kurnool district (AP) from August 2012 to March 2013. The children less than 6/12 or less than underwent ophthalmic examination by Objective method using streak retinoscope, subjective refraction and ophthalmoscope examination and anterior segment and posterior segment examination in order to rule out the organic pathology and mental retardation. Diagnostic criteria for Amblyopia were best corrected visual acuity 6/12 or less are referred to Regional eye Hospital Kurnool for refractive error

correction among 29,351 students examined and prescribed the spectacle correction for 5415 and 589 children referred to REH, Kurnool. 409 children given spectacle correction for refractive errors at Regional Eye Hospital, Kurnool and remaining 180 children are investigated and found that 12 children are amblyopic.

Distribution of patients according to Amblyopia

Amblyopia	Frequency	Percent
No	168	93.33
yes	12	06.66

Gender wise prevalence

gender	Amblyopia		total	Percentage
	Yes	No		
male	04	85	89	49.44
female	08	83	91	50.55

Laterality of Amblyopia

Amblyopia absent (None)	Frequency	Percentage %
	168	93.33
Unilateral	7	03.88
Bilateral	5	02.77
Total	180	

Proportion of various types of Amblyopia

Type	frequency	percent
No Amblyopia	168	93.33
ametropic	2	01.11
Anisometropic	2	01.11
meridional	6	03.33
strabismic	2	01.11
total	180	

3. Discussion

The world organization has grouped uncorrected refractive errors, cataract, macular degeneration, infectious diseases and vitamin A deficiency among the leading causes of blindness and vision impairment in the world. A global initiative for the elimination of avoidable blindness by the world health organization (WHO), International Agency for

Prevention of Blindness and other partner organizations, also included refractive errors among the five conditions of immediate priority” Amblyopia is mainly caused by uncorrected refractive errors during the 1st decade of life. After this sensitive period, refractive correction does not improve with correction and the eye becomes Amblyopic. It is necessary to correct the refractive error to prevent the amblyopic.

The results revealed that out of 180 students referred to Regional Eye Hospital Kurnool only 12 cases were amblyopic. Out of these 12, 4(33.33) were boys and 8(66.66) were girls. Meridional type of amblyopia is the common type amblyopia being 50 % (6/12), Ametropic 16.66% (2/12), anisometric 16.66 % (2/12), and strabismic 16.66 % (2/12) and Unilateral amblyopia were 7 (58.33 %) and Bilateral amblyopia 5 (41.66 %).

According age wise distribution from 6-9years of age the incidence is 6 (50%) and from 10-15 years of age 6 (50%).

Gender wise prevalence

Sapkota et al the prevalence of uncorrected, presenting, and best-corrected visual impairment in the better eye 18.6%, 9.1% and 0.86%. Refractive error was a cause in 93.3% of children with uncorrected visual impairment .Amblyopia 1.8%, retinal disorders 1.3%, other causes 0.3% and unexplained causes 4.4%.”

Timely diagnosis and treatment is likely to reduce the prevalence of amblyopia as it has been seen in many other countries that have taken up mass education and visual screening at community levels (3, 4, 5, 6, 7)

4. Conclusion

Lack of awareness of parents because of illiteracy and ignorance .By this study it is mandatory to screen the children for refractive errors and correction of refractive error and improve the facility for checkup and frequent eye screening for refractive errors and strabismus examination and corneal blind and cataract for school children.

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