Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 7, Issue, 05, pp.16186-16187, May, 2015

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

ISSN: 0975-833X

RESEARCH ARTICLE

PREVALENCE OF AMBLYOPIA IN SCHOOL GOING CHILDREN WITH REFRACTIVE ERRORS

Dr. AnithaCherian and *Dr. Biju Gopal

Department of Ophthalmology, Dr. Somerwell Memorial CSI Medical College and Hospital, Karakonam, Thiruvananthapuram (Kerala)

ARTICLE INFO

Article History:
Received 25th February, 2015
Received in revised form
23rd March, 2015
Accepted 14th April, 2015
Published online 31st May, 2015

Key words:

Amblyopia,
Refractive errors,
Myopia,
Myopic astigmatism,
Squint.

ABSTRACT

Introduction: Amblyopia is reduced visual acuity even with proper optical correction in one or both eyes , resulting from altered visual development despite ophthalmoscopically normal retinal and optic nerve anatomy. Anisometopia is one of the leading causes of amblyopia. Decreased vision because of uncorrected refractory errors is a major public health problem of school going children in India. School screening programmes have been established in India since 1907. These programmes are primarily aimed at detecting amblyopia and refractive errors.

Objectives: To study the prevalence of amblyopia in school going children with refractory errors and to determine the type of refractory error which causes maximum amblyopia.

Methods: A descriptive study were 28,852 students between the age group of 6 – 15 years from 65 schools were screened . 540 students were found to have refractive errors and they were further assessed to study the prevalence of amblyopia and associations.

Results: Out of 540 students 15.7% had Amblyopia . It was commonly seen in children between the age group of 11 – 13 years 38.3% . Myopia and Myopic astigmatism was seen associated with maximum number of amblyopic children 48.4% and 33.9% respectively.

Conclusion: There is a high prevalence of amblyopia in school children with refractive errors which points towards the inadequacies in the present school screening programmes in detecting refractive errors at an earlier stage and thereby preventing development of amblyopia.

***Citation*:** Dr. AnithaCherian and Dr. Biju Gopal, 2015. "Prevalence of amblyopia in school going children with refractive errors", *International Journal of Current Research,* 7(5), 16186-16187

INTRODUCTION

Amblyopia is the unilateral or rarely bilateral disease of best corrected visual acuity caused by form vision deprivation and/ or abnormal binocular interaction for which there is no pathology of the eye or visual pathway. Anisometropia is one of the leading cause for amblyopia. Refractive error is the commonest cause of visual impairement and second leading cause of treatable blindness. According to National Blindness survey 7.35% social blindness is caused by uncorrected refractory errors. Most of the refractive errors can be corrected by early visual rehabilitation with spectacles or contact lenses. School screening programmes primarily aimed at detecting refractive errors and amblyopia have been established in this country as part of school health service since 1907.

Corresponding author: Dr. Biju Gopal,
Department of Ophthalmology, Dr. Somerwell Memorial CSI medical college and hospital, Karakonam, Thiruvananthapuram (Kerala).

Objectives

To study the prevalence of amblyopia in school going children with refractive errors and to assess the type of error which causes maximum amblyopia in these children.

MATERIALS AND METHODS

This was a descriptive study done on students aged between 6 – 15 years from 65 schools covering 6 panchayats in Thiruvananthapuram distict in Kerala under Sarva Shiksha Abhiyan. A total of 28,852 students were screened out of which 540 students with refractive errors were selected for the study. A detailed history and examination was done by both refractionist and ophthalmologist including fundus examination and cycloplegic retinoscopy. Post mydriatic test was done after one week. Appropriate correction was advised. Those students who were found to be amblyopic depending on the age , degree of amblyopia, magnitude of refractive error, occlusion therapy was adviced with regular follow up. During follow up side effects were noted if any, visual acuity, fixation of each eye and ocular alignment was noted along

with cycloplegic refraction and maintenance regime was adviced i.e. maintaining equal vision in both eyes by partial occlusion. The findings were entered in a proforma and statistical analysis was done using SPSS software.

RESULTS

Out of 540 students with refractive errors 38.3% (207) were between the age groups of 11- 13 years. 54.4% (294/540) were female as compared to males. Hypermetropia was the commonest error seen 55.9% (302/540) followed by myopic astigmatism 31.1% (168/540). This observation was seen in both eyes. 88.3% (477/540) of the refractive errors were bilateral. Amblyopia was seen in 15.7% (85/540) children with refractive error. 31.7% (20/85) of students with amblyopia had unilateral refractive error. About 5.4% (29/540) of the children with refractive error had squint. Only about 6.7% (36/540) of the children with refractive errors were using corrective glasses. 17.7% (52/294) female students has amblyopia as compared to 13.4% (33/246) males. Amblyopia was maximally associated with Myopia 48.4% (15/31) followed by Myopic astigmatism 33.9% (57/168). Even though Hypermetropia was the most common refractive error seen it was associated with only 1.3% (4/302) amblyopia. This finding was same in both eyes. About 28.2% (24/85) students with amblyopia had associated squint.

DISCUSSION

This study shows amblyopia to be present in 15.7% children with refractive errors, similarly in a study conducted in (Kathmandu, 2002) involving 1100 children 12.4% of the children with refractive error developed amblyopia. In a study by (Dandona *et al*., 2002) in rural population of Andhra Pradesh 12% of the children has Amblyopia while 61% of the children had refractive errors. In this study 38.3% children with refractive error were between the age groups 11 – 13 years. In a study done under assistance from (DANPCB) more children with refractive error were identified between the age groups of 10 -15 years. In the present study the most common refractive error seen was hypermetropia 55.9% which is similar to findings in a study conducted by (Kalikivayi *et al*., 1997) where they found hypermetropia to be 22.6% followed by astigmatism 10.3%. Whereas in the (Kathmandu study) myopia was the most common refractive error seen. As more of younger population was screened in our study, an increased hypermetropia rate was observed, Myopic astigmatism was seen in 31.1% cases and can be explained by the myopic shift as the child grows. 17.7% female students had amblyopia which shows the gender bias in our country regarding disability detection and treatment in female child by the parents. Myopia and myopic astigmatism was seen associated more with amblyopia contrary to a study conducted by (Qamar Farooq *et al.,* 2014) who found that more hypermetropic children were affected as compared to myopics.

There is a significant association with squint and amblyopia therefore every child with squint should have proper evaluation. Unilateral refractive error was associated with increased chance of developing amblyopia. Only about 6.7% children with refractive errors are using glasses.

Conclusion

A high prevalence of amblyopia is seen in school going children with refractive errors which shows the inadequacy of present school screening programmes. Most of the cases were seen in 11 to 13 year old children by which time it is too late to start amblyopia therapy.

Recommendations

- More school screening programmes should be conducted.
- Screening should be started at a younger age group.
- Appropriate correction should be done to reduce the chances of amblyopia.
- Regular follow up and correction to be done.
- Proper amblyopia therapy should be started once diagnosed.
- Regular follow up should be done.
- Patient and parent education for proper compliance.

REFERENCES

B P Nepal, S Koirala, S Adhikary, and A K Sharma Ocular morbidity in schoolchildren in Kathmandu, *Br J Ophthalmol.,* 2003 May; 87(5): 531–534

Dandona, R., Dandona, L., Srinivas, M. *et al*. 2002. Refractive errors in children in rural population of India.*Invest Ophthalvissci*., 43:616 -622.

Ingram, R.M. 1977. Refraction as a basis for screening children for squint and amblyopia. *Br J Ophthalmol.,* 61, 8-15.

Kalikivayi *et al*.1997. visual impairment in school children in South India. *Indian Journal of Opthalmology*., 45: 129-34.

Limburg *et al*. 1999. Results of school eye screening of 5.4 million children in India – a five year study. (DANPCB) *Acta Ophthalmol.Scand*., 77:310-4

Parsons diseases of the eye.

Qamar Farooq, Maria Waqas and Ali Raza. 2014. Refractive Errors Causing Amblyopia in Children. *Journal of Rawalpindi Medical College (JRMC),* 18(2):254-256.

****