DOI: 10.26717/BJSTR.2018.05.001211

Partha Haradhan Chowdhury. Biomed J Sci & Tech Res

BIOMEDICAL Journal of Scientific & Technical Research

ISSN: 2574-1241

Research Article Open Access

Comparison of Visual Acuity in Different Types of Deviation

Partha Haradhan Chowdhury*[1] and Brinda Haren Shah[2]

[1]*Department of Optometry, Dehradun, India*

[2]*Department of Optometry, Gujarat University, Gujarat, India*

Received: June 07, 2018; **Published:** June 13, 2018

***Corresponding author:** Partha Haradhan Chowdhury, Department of Optometry, M Optom, Shree Satchandi Jankalyan Samiti Netra Prasikshan Sansthan, Pauri, Affliated to Uttarakhand State Medical Faculty, Dehradun, India

Abstract

Purpose: The aim of the present study is to compare the visual acuity in different types of deviation.

Methods: A pilot, cross sectional, observational study was performed at tertiary eye care centers. Subjects with Ocular deviation between 10 to 40 prism diopters, Corrected distance Visual Acuity should be greater than 6/18 and Age should be between 10 to 40 years of age were included in the study. Visual Acuity was assessed with Log Mar chart.

Result: 30 subjects were included in the study. Out of that,16 subjects were in the age group of 11-20 years, 12 subjects were in the age group of 21-30 years and 2 subjects were in the age group of 31-40 years. 60% subjects were Female and 40% subjects were Male. The mean visual acuity was considered in each type of deviation. It shows that visual acuity will be deteriorated more in Esotropia as compared to Exotropia

Conclusion: Deterioration of visual acuity is observed more in Esotropia as compared to Exotropia.

Keywords: Visual Acuity; Esotropia; Exotropia

Introduction

According to increasing ocular deviation Visual Acuity is being deteriorated due to the anatomical consideration is the main factor. Increasing ocular deviation proportionately image is shifted from the foveal region and thus deterioration is present. In case of Esodeviation images are shifted to nasal fovea and due to very less time of intermittent stages are present in Eso deviation there may be lots of chances to become Amblyopia compare to Exo deviation. If Eso deviation is present during the visual development stages on that time it become very crucial to treat it specially in case of Eso deviation due to most of the time deviated eye is become fixed but in case of Exo deviation most of the time it is associated with intermittent deviation. That's why there may be lots of chances of deterioration of visual acuity is more in Eso deviation compare to Exo deviation [1-5].

Methodology

A pilot, cross sectional, observational study was performed at tertiary eye care centers. Subjects with Ocular deviation between 10 to 40 prism diopters, Corrected distance Visual Acuity should be greater than 6/18 and Age should be between 10 to 40 years of age were included in the study. Individuals with any other systemic disease (specially which can affect study), Individuals with any other Ocular Pathology, with any active ocular infection, any ocular anomalies like Corneal Scar etc, ocular deviation if less than 10 degree and Significant amount of amblyopic patient were excluded from the study. Full refractive correction along with detailed fundus evaluation was performed in each and every patient. Visual acuity was assessed with Log Mar chart in different types of ocular deviation. Data was analyzed using SPSS software version 20 [6].

Result

30 subjects were included in the study. Graph 1 shows distribution of subjects in various age groups. 16 subjects were in the age group of 11-20 years, 12 subjects were in the age group of 21-30 years and 2 subjects were in the age group of 31-40 years. Graph 2 shows gender wise distribution of the subjects. 60% subjects were Female and 40% subjects were Male. Graph 3 shows comparison of Visual Acuity for different types of ocular deviation. The mean visual acuity was considered in each type of deviation. It shows that visual acuity will be deteriorated more in esotropia as compared to exotropia (Figures 1-3).

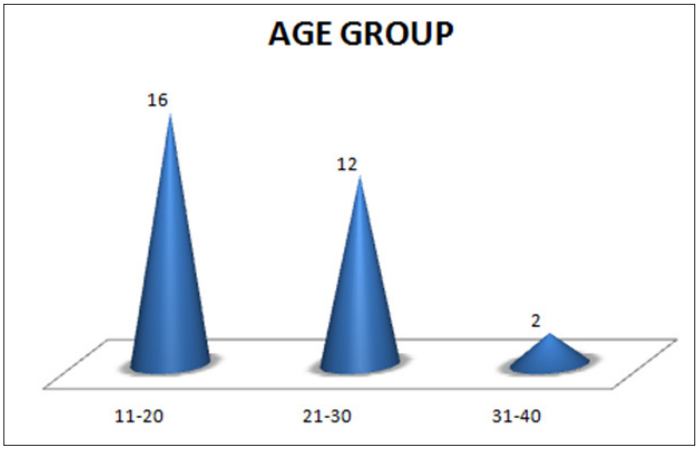

Figure 1: Shows Age Wise Distribution of the Subject.

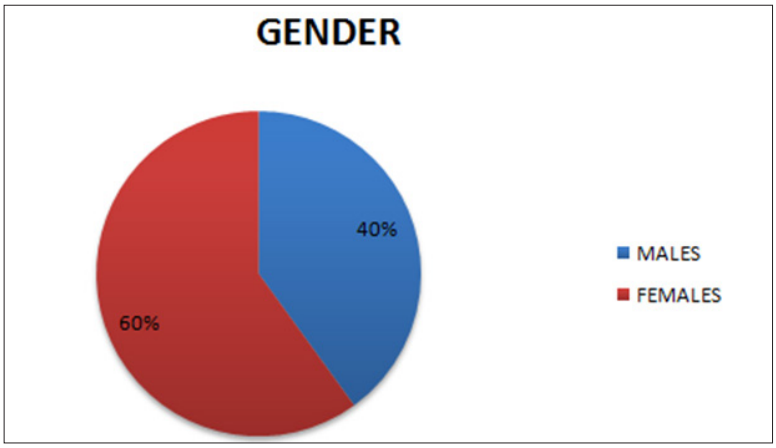

Figure 2: Shows Gender Wise Distribution of the Subjects.

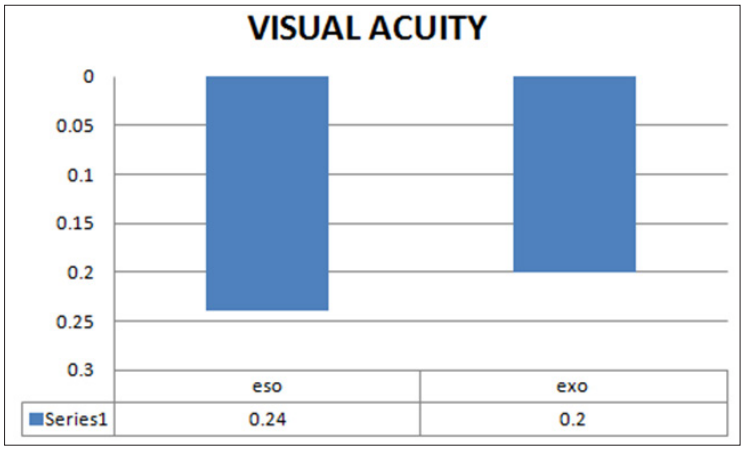

Figure 3: Shows comparison of Visual Acuity for different types of ocular deviation.

Discussion

In case of ocular deviation images of an object are falling on parafoveal region and due to inequality of the number of the cone cells in the macular region there may be chances of the vision deterioration with increasing ocular deviation. In case of Esodeviation the images of an object is placed at the nasal retinal side and due to its intermittent stages is very low compare to Exodeviation, there have strong chances to become Amblyopia. Thus statistically it has been proved that with increasing ocular deviation visual Acuity has been deteriorated proportionately. According to the study it has been proved that in case of Esodeviation the deterioration of Visual Acuity is more compare to Exodeviation [7].

Conclusion

Deterioration of visual acuity is observed more in Esotropia as compared to Exotropia.

References

1. Kenneth W Wright, Peter H Spiegel, Lisa Thompson (2006) Handbook of Pediatric Strabismus and Amblyopia. New York, USA.
2. Hui Zhu (2015) Association between Childhood Strabismus and Refractive Error in Chinese Preschool Children. Journal of Plos One 10(6): e0130914.
3. Zhale Rajavi (2015) Prevalence of Colour Vision Deficiency and its Correlation with Amblyopia and Refractive Errors among Primary School Children. Journal of Ophthalmic and Vision Research 10(2): 130-138.
4. Anika K, Tandon (2014) Binocular Inhibition in Strabismic Patients is Associated with Diminished Quality of Life. Journal of American Association for Pediatric Ophthalmology and Strabismus 18(5): 423-426.
5. Xc Ye (2014) Strabismus genetics across a spectrum of eye misalignment disorders. Journal of clinical genetics 86(2): 103-111.
6. AG Kocak (2000) Altintas Visual Acuity and Colour Vision deficiency in Amblyopia. European Journal of Ophthalmology 10(1): 77-81.
7. Alan W Freeman (1996) Components of Visual Acuity Loss in Strabismus. Journal of vision research 36(5): 765-774.

Submission Link: https://biomedres.us/submit-manuscript.php