

Visual Acuity Comparison of Alternate Esotropia for Different Amount of Deviation

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Abstract

Purpose: Aim of the present study is to compare visual acuity in different amounts of deviation of Alternate Esotropia.

Methods: 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.

Results: 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 amount of deviation. It shows that maximum acuity is deteriorated in the ocular deviation of 31-40 prism diopters of Alternate Esotropia.

Conclusion: As the amount of ocular deviation increases, visual acuity will be more deteriorated in cases of Alternate Esotropia.

Keywords: Visual Acuity, Alternate Esotropia, Amount of deviation

Introduction

Ocular deviation is a very important factor for all important parameters. Among these parameters, visual acuity is the most important parameter. Cone cells are very important factor for visual acuity. In normal cases, the images of an object falls on the foveal area and when the eye is deviated, the images will fall on the para foveal region. Here, anatomical consideration is an implacable factor for deterioration of visual acuity.

The cone density is much more in the foveal region as compared to para foveal region and cone cells are much more in the foveal region as compared to para foveal region. So, in case of Esodeviation, images of an object fall on the nasal para foveal region. As per the anatomical consideration, there are lots of chances for deterioration of visual acuity with increase in Alternate Esotropia.

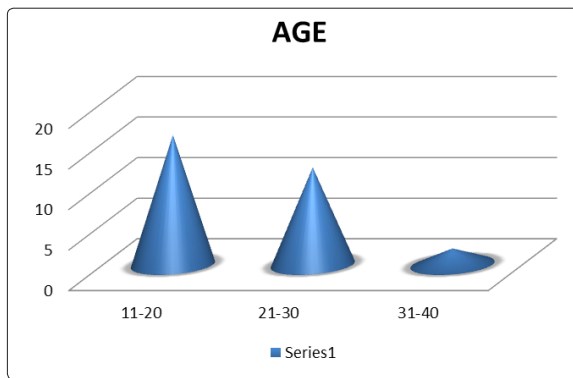
Methodology

Cross sectional, pilot and observational study was performed at tertiary eye care centers. Inclusion criteria includes 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. Individuals with any other systemic disease

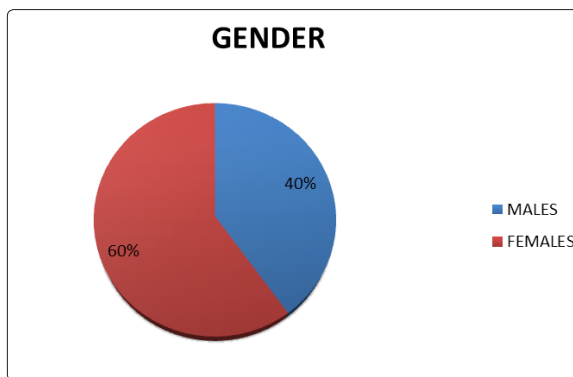
(specially which can affect study), Individuals with any other Ocular Pathology, with any active ocular infection, any ocular anomalies like Corneal Scar etc., ocular deviation if less than 10 degree and Significant amount of amblyopic patient were excluded from the study. Full refractive correction along with detailed fundus evaluation was performed in each and every patient. Visual Acuity was assessed with Log Mar Chart in different amounts of deviation of Alternate Exotropia. Data analysis was done using SPSS software version 20.

Results

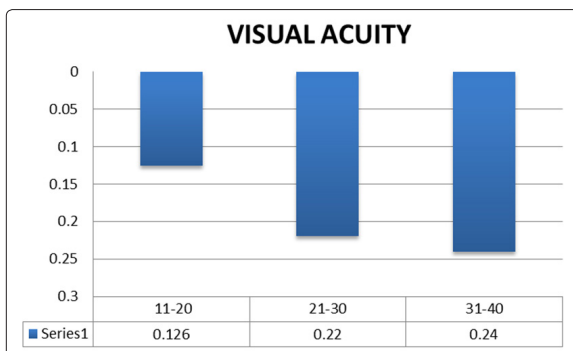
A total of 30 subjects were included in the study. Age wise distribution is shown in Graph 1. 16, 12 and 2 subjects were in the age group of 11-20 years, 12, 21-30 years and 2 subjects were in the age group of 31-40 years. Graph 2 shows gender wise distribution of the subjects. 60% subjects were Female and 40% subjects were Male. Graph 3 shows comparison of mean Visual Acuity of subjects with Alternate Esotropia with different amount of ocular deviation. In Alternate Esotropia of 11-20 prism diopters, mean Visual Acuity is 0.126 log units. In Alternate Esotropia of 21-30 prism diopters, mean Visual Acuity is 0.22 log units. In Alternate Esotropia of 31-40 prism diopters, mean Visual Acuity is 0.24 log units. This shows that maximum acuity is deteriorated in the ocular deviation of 31-40 prism diopters of Alternate Esotropia.



Graph 1: Shows age wise distribution of the subjects



Graph 2: Shows gender wise distribution of the subjects



Graph 3: Shows comparison of contrast sensitivity for different amount of deviation for esotropia

Visual Acuity	Log Units
11-20	0.126
21-30	0.22
31-40	0.24

Discussion

In case of Alternate Esotropia, the images of an object are falling on the nasal para foveal region. It is very important factor for visual acuity due to anatomical consideration. In the foveal region, cone cell density is highest compare to para foveal region. In case of Alternate Esotropia, the images of an object are focused on the nasal parafoveal region alternately and due to number of cone cells deformity, visual acuity is being deteriorated in cases of Alternate Esotropia.

Conclusion

As the amount of ocular deviation increases, visual acuity will be more deteriorated in cases of Alternate Esotropia [1-7].

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