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Research Article

COMPARISON OF CONTRAST SENSITIVITY IN DIFFERENT TYPES OF DEVIATION

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A R T I C L E I N F O

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A B S T R A C T

Purpose: The aim of the present study is to compare the contrast sensitivity 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 Contrast sensitivity should be greater than 6/18 and Age should be between 10 to 40 years of age were included in the study. Contrast sensitivity was assessed with Pelli Robson Contrast Sensitivity 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 contrast sensitivity was considered in each type of deviation. It shows that contrast sensitivity will be deteriorated more in Esotropia as compared to Exotropia
Conclusions: Deterioration of contrast sensitivity is observed more in Esotropia as compared to Exotropia.

INTRODUCTION

According to increasing ocular deviation CS 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 CS is more in Eso deviation compare to Exo deviation. But in case of CS there may not be much more difference in deterioration between Eso and Exo deviation.

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 Contrast sensitivity 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. Contrast sensitivity was assessed with Pelli Robson Contrast Sensitivity Chart in different types of ocular deviation. Data was analyzed using SPSS software version 20.

RESULTS

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 Contrast sensitivity for different types of ocular deviation. The mean contrast sensitivity was considered in each type of deviation. It shows that contrast sensitivity will be deteriorated more in esotropia as compared to exotropia.

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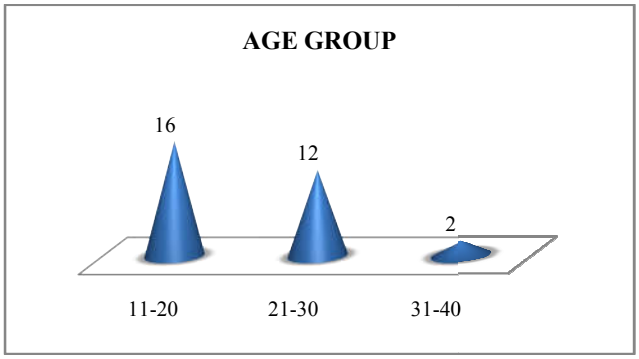
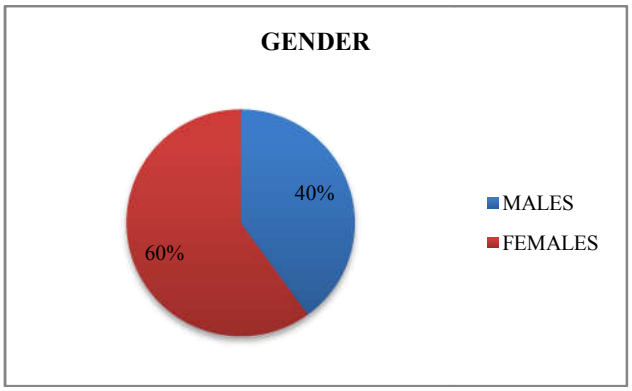
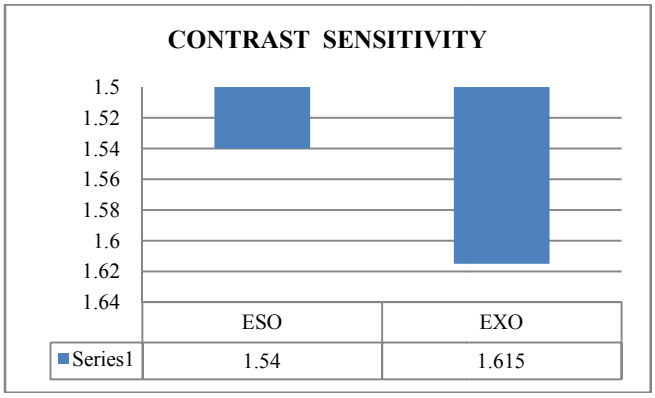


Graph 1 Shows Age Wise Distribution of the Subject



Graph 2 shows gender wise distribution of the subjects



Graph 3 Shows comparison of Contrast sensitivity for different types of deviation

DISCUSSION

According to the present study, it has been showed that in cases of ocular deviation, images of an object fall on the Para foveal region and deteriorates the Contrast Sensitivity. In case of Exodeviation there have less chances to become Amblyopia due to most of cases intermittent timing is high compare to Eso deviation.

In case of Exodeviation images of an object is fall on the temporal parafoveal region and according to the deformity of the anatomical arrangement of the photoreceptor cells in the macula that's why in the parafoveal region number of cone cells is less compare to foveal region. Just for this reason in case of Exodeviation images is shifted towards the temporal foveal region and due to less number of cone cells and according to the statistics it has been proved that with increasing Exodeviation Contrast Sensitivity is been deteriorated. According to the study it has been proved that in case of Esodeviation the deterioration of Contrast Sensitivity is more compare to Exodeviation.

CONCLUSION

Deterioration of contrast sensitivity is observed more in Esotropia as compared to Exotropia.

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