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EFFECT OF COLOUR VISION IN MACULAR HOLE

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Abstract:-

Purpose:-
The aim of the study is to analyse the effect on Colour Vision in cases of Macular Hole
Methodology:-
Prospective cross sectional study was performed at tertiary eye care centers within the period of 2.5 years. Screening was done and subjects were taken to tertiary eye care centers for further evaluation. Subjects with macular hole were included and visual functions along with slit lamp evaluation and fundus evaluation were performed. Colour Vision was assessed with PV 16 colour vision Test. Data was analyzed using SPSS software version 20 and Microsoft Office Excel version 10.
Results:-
58 subjects were included in the study. Out of that 71 % were males and 29% were Females. Colour vision was assessed and it is found that only 16 % of subjects were having normal colour vision while 62 % of subjects were having Mild Tritanopia and 22% of subjects will develop Moderate Tritanopia.
Conclusion:-
Mild to Moderate Tritanopia develops in cases of Macular whole.

Keywords:- *Macular Hole, Colour Vision*

INTRODUCTION:

Macular hole is a condition where tiny retinal split is present at the Macular area. In this case, Visual Acuity is deteriorated due to involvement of Macular area. The density of cone cells is highest at macular area compared to other regions. In presence of Macular hole, Retinal structure is changed and sometimes patient will complain of Distortion also. There are

chances of deterioration of Colour Vision in the presence of Macular whole. Because in this case, Retinal split is present Cone cells are also involved. Due to highest density of cone cells in the foveal region as compared to Para foveal region, there may be chances to deterioration of Colour vision.

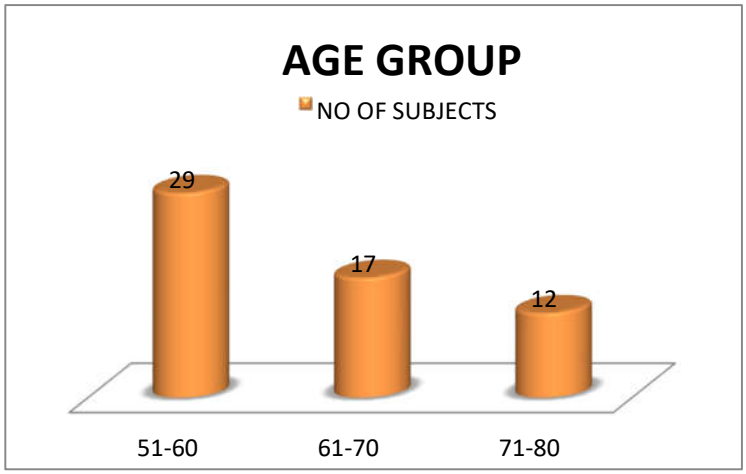
METHODOLOGY:

A prospective cross sectional study was performed at tertiary eye care centers within the period of 2.5 years. All the subjects are enrolled with informed consent. Low vision screening was done at various centers and subjects were taken to tertiary eye care centers for further evaluation. Subjects having macular hole and which fall under the criteria of low vision are included in the study. Subjects who do not fall into the criteria of low vision and vision with hand movement to no Pl were excluded from the study. Subjects having any other ocular or systemic problems which can affect the study were also excluded from the study. Colour Vision was measured with PV 16 Colour Vision Test. All the visual functions were performed with full Refractive correction. Data was analyzed using SPSS software version 20 and Microsoft Office Excel version 10.

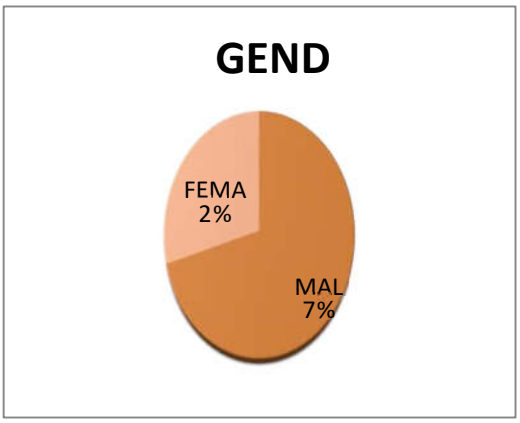
RESULTS:

A total number of 58 subjects were enrolled in the study. Graph 1 shows distribution of subjects as per the age. 29 subjects were in the age group of 51-60 years, 17 subjects in the age group of 61-70 years and 12 subjects in the age group of 71-80 years. Graph 2 shows Gender wise distribution of the subjects. 71% subjects were Males and 29% were Females. Graph 3 shows effect of colour vision in presence of Macular whole. It shows that only 16 % of subjects were having normal colour vision while 62 % of subjects were having Mild Tritanopia and 22% of subjects will develop Moderate Tritanopia.

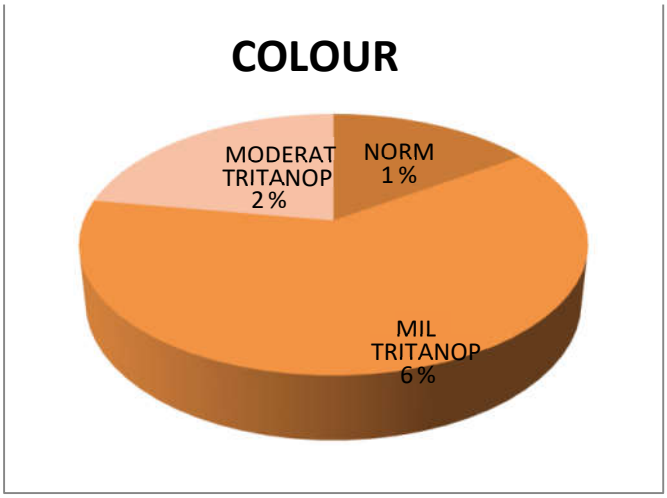
GRAPH 1: SHOWS AGE WISE DISTRIBUTION OF SUBJECTS



GRAPH 2: SHOWS GENDER WISE DISTRIBUTION OF SUBJECTS



GRAPH 3: SHOWS EFFECT OF COLOUR VISION IN PRESENCE OF MACULAR HOLE.



DISCUSSION:

In macular hole, small break is present in the macular area. The main cause is Trauma, Diabetic Retinopathy etc. The density of cone cells is maximum in the macular area. So, in these cases, where macula is affected, there will be changes in the anatomical variation of cone cells. Cone cells are completely responsible for Colour Vision, so if any anomaly is present in cone cells, then Colour Vision will be deteriorated.

CONCLUSION:

Mild to Moderate Tritanopia develops in cases of Macular whole.

CONSENT:

Oral/ Written consent was taken from each and every subject and tertiary eye care centers.

ETHICAL APPROVAL:

Not applicable

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