

# FP 63905 - A CLINICAL STUDY OF OPTIC NEUROPATHY

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# FINANCIAL DISCLOSURE

- NO FINANCIAL INTEREST



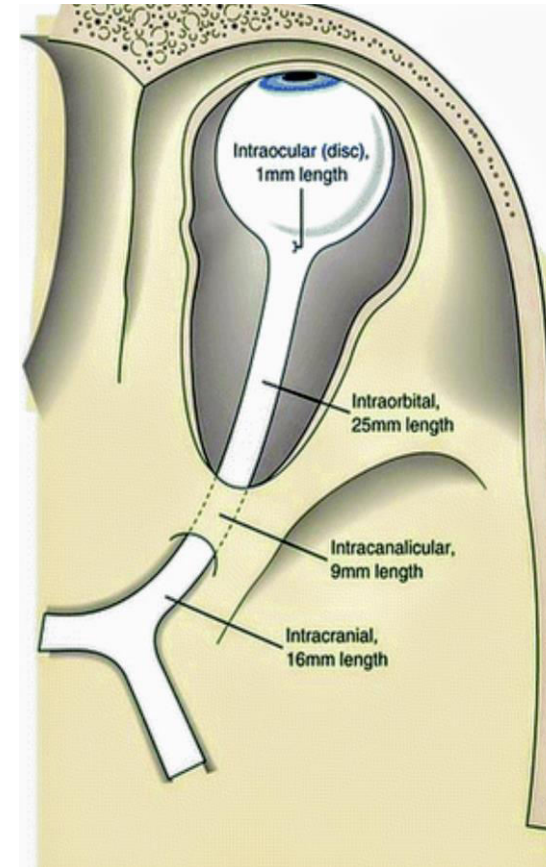
# INTRODUCTION

- Optic Neuropathy is a frequent cause of vision loss
- The classical clinical signs are visual field defects, dyschromatopsia, and abnormal pupillary response.



# ANATOMY

- Optic nerve is a paired nerve which carries visual information from the retina to the brain.  
EMBRYOLOGY- It is developed from optic stalk during the 7<sup>th</sup> week of gestation.
- Optic nerve contains approximately 1.2 million nerve fibres.
- Divided into 4 parts
- It is covered by myelin produced by oligodendrocytes
  - cannot regenerate.
- It is covered by 3 layers of meninges.
- Both primary and secondary neurons are in retina.



# AIMS AND OBJECTIVES

- To Study and evaluate various optic neuropathies and etiological factors leading to optic Neuropathy



# MATERIALS AND METHODS

- A prospective clinical study was carried on 50 cases of optic Neuropathy who attended to department of ophthalmology in a tertiary care centre from december 2019 to September 2021

## INCLUSION CRITERIA

- All clinically established cases of optic Neuropathy are included



# CLASSIFICATION

## **OPHTHALMOSCOPIC**

Primary optic atrophy  
Secondary optic atrophy  
Consecutive optic atrophy  
Ischemic optic atrophy  
Glaucomatous optic atrophy

## **AETIOLOGICAL**

Demyelinating  
Non-arteritic ischemic  
Arteritic ischemic  
Inflammatory  
Infiltrative  
Compressive  
Toxic/nutritional  
Hereditary  
Traumatic  
Radiation  
Paraneoplastic



# Diagnosis

- History
- Neuro-ophthalmic examination

## Investigations

- Visual acuity
- Colour vision
- Visual field testing
- Laboratory investigations
- Optical coherence tomography (OCT)
- MRI
- Electrophysiological tests

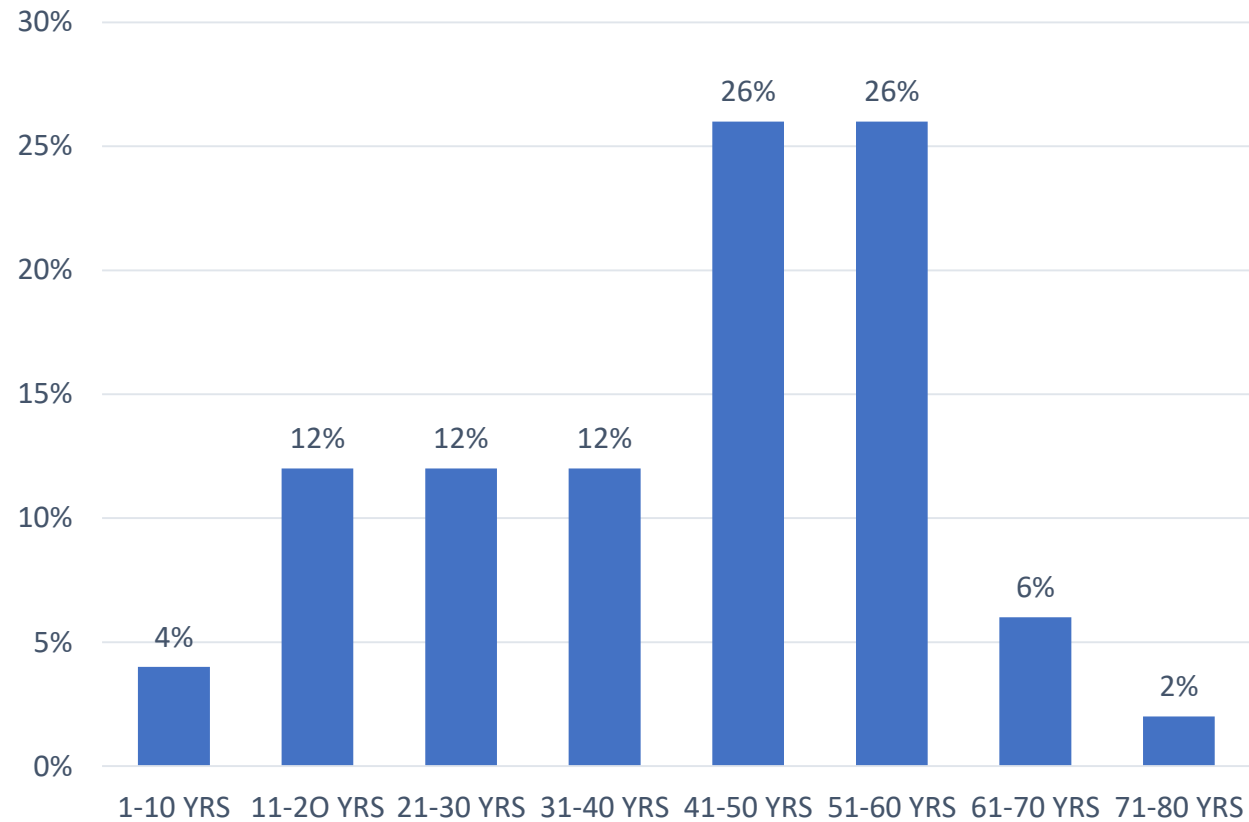




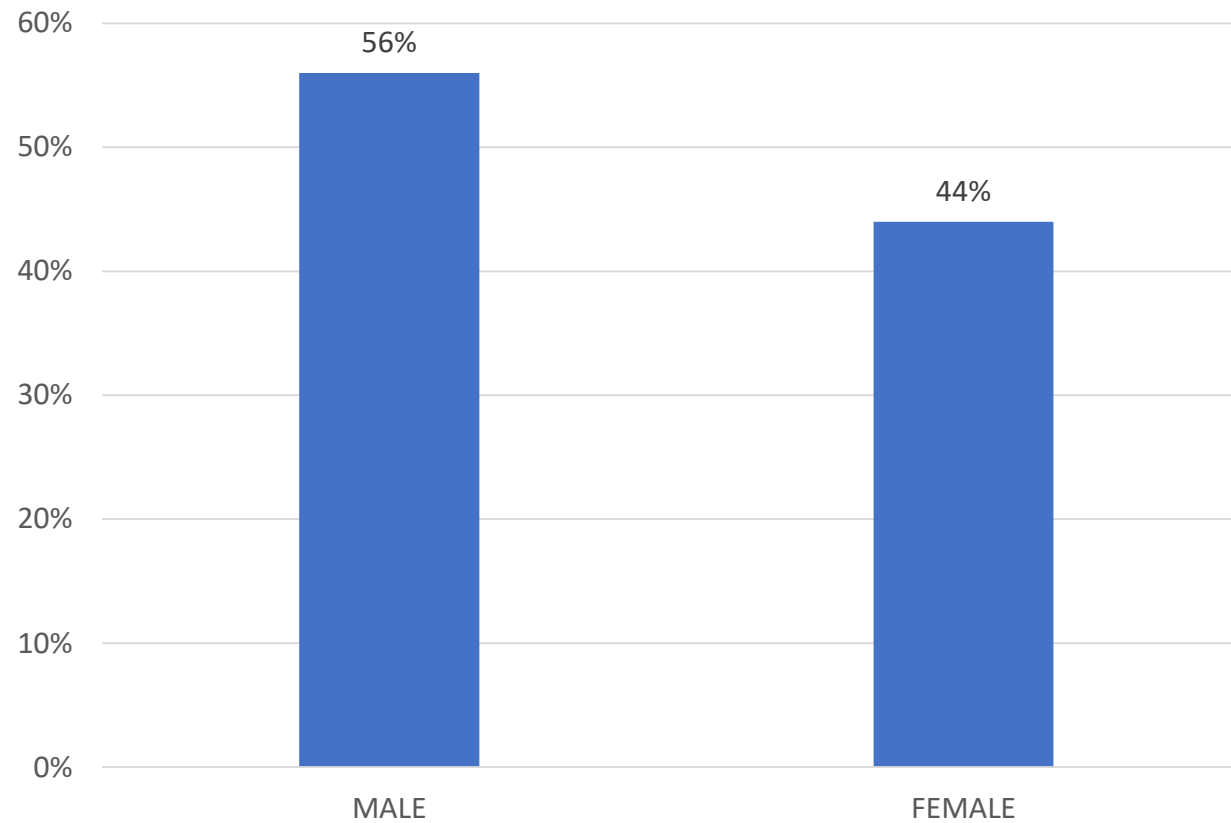
# RESULTS



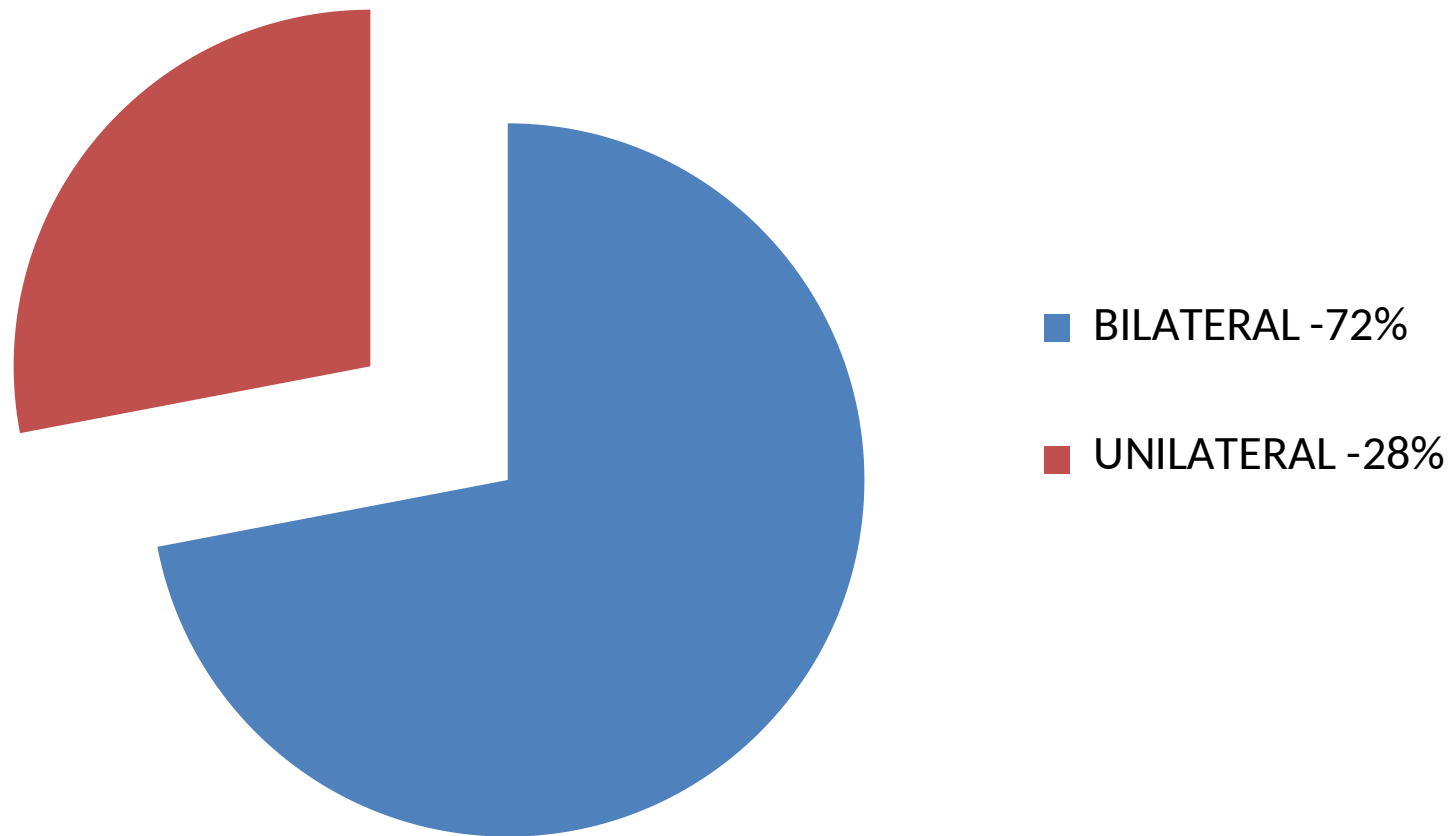
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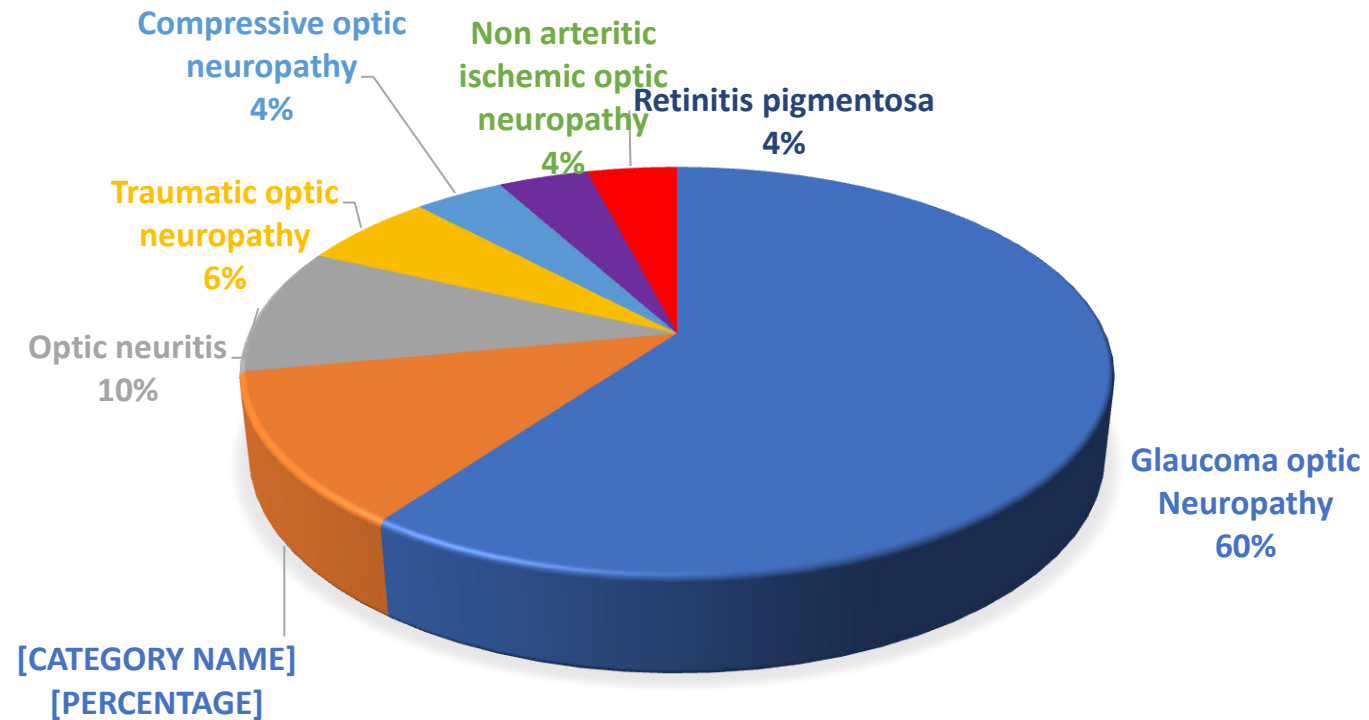
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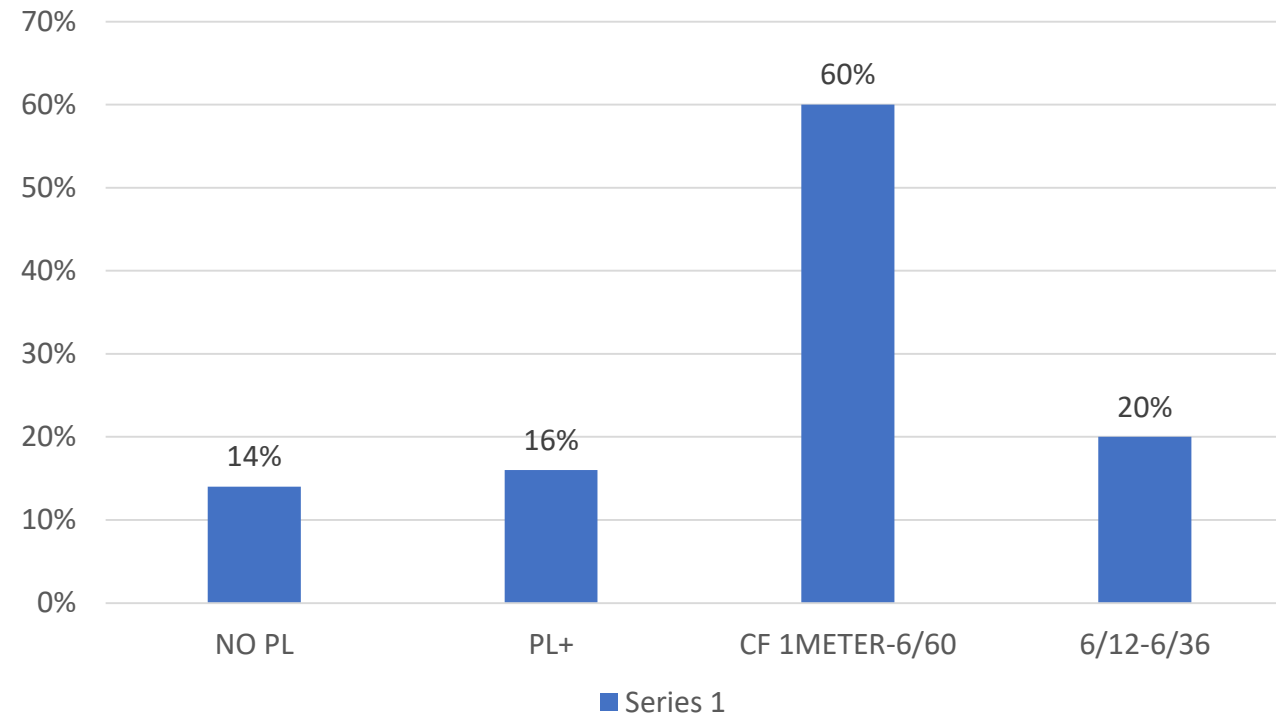
# LATERALITY



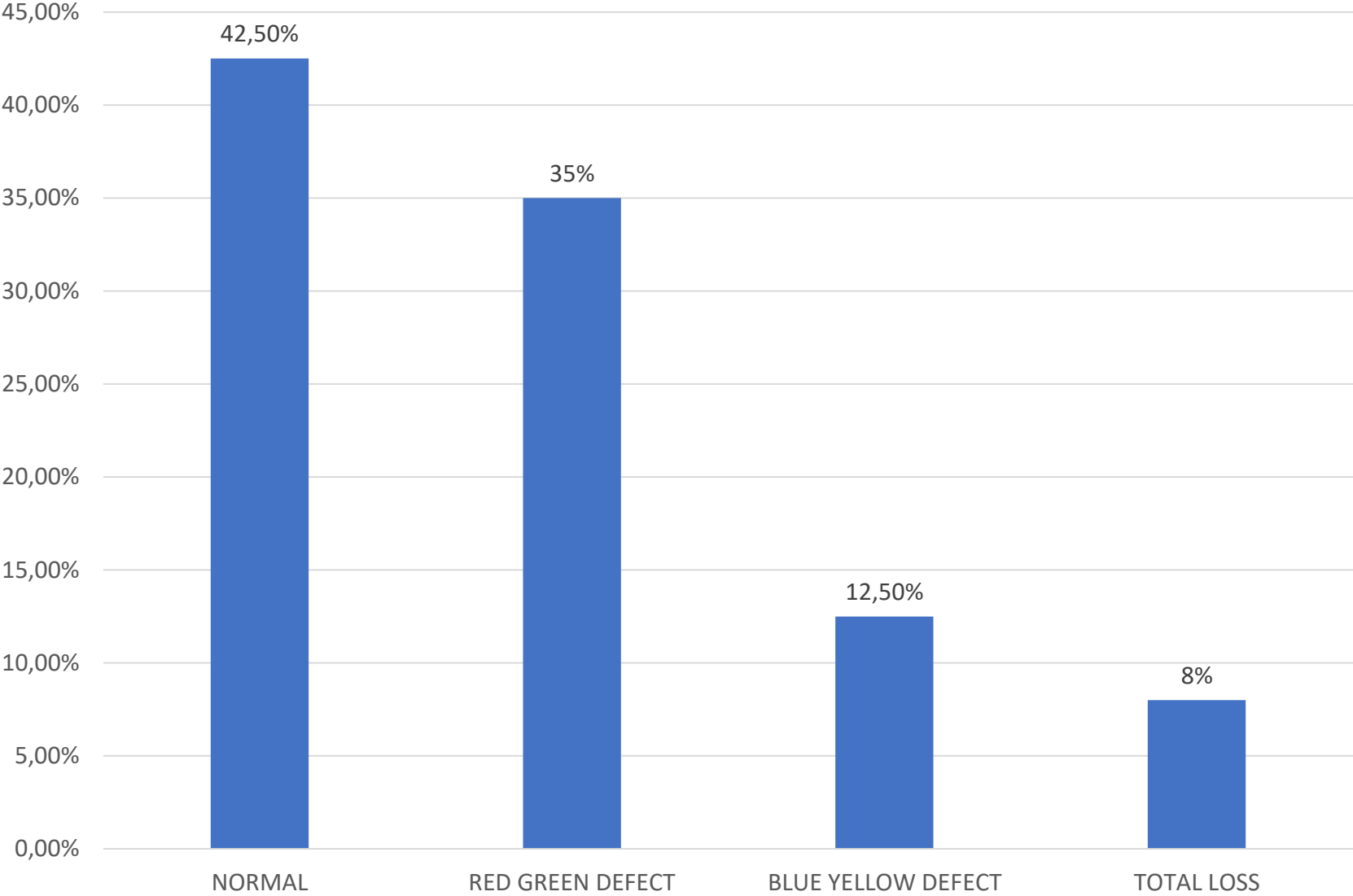
# ETIOLOGY OF OPTIC NEUROPATHY



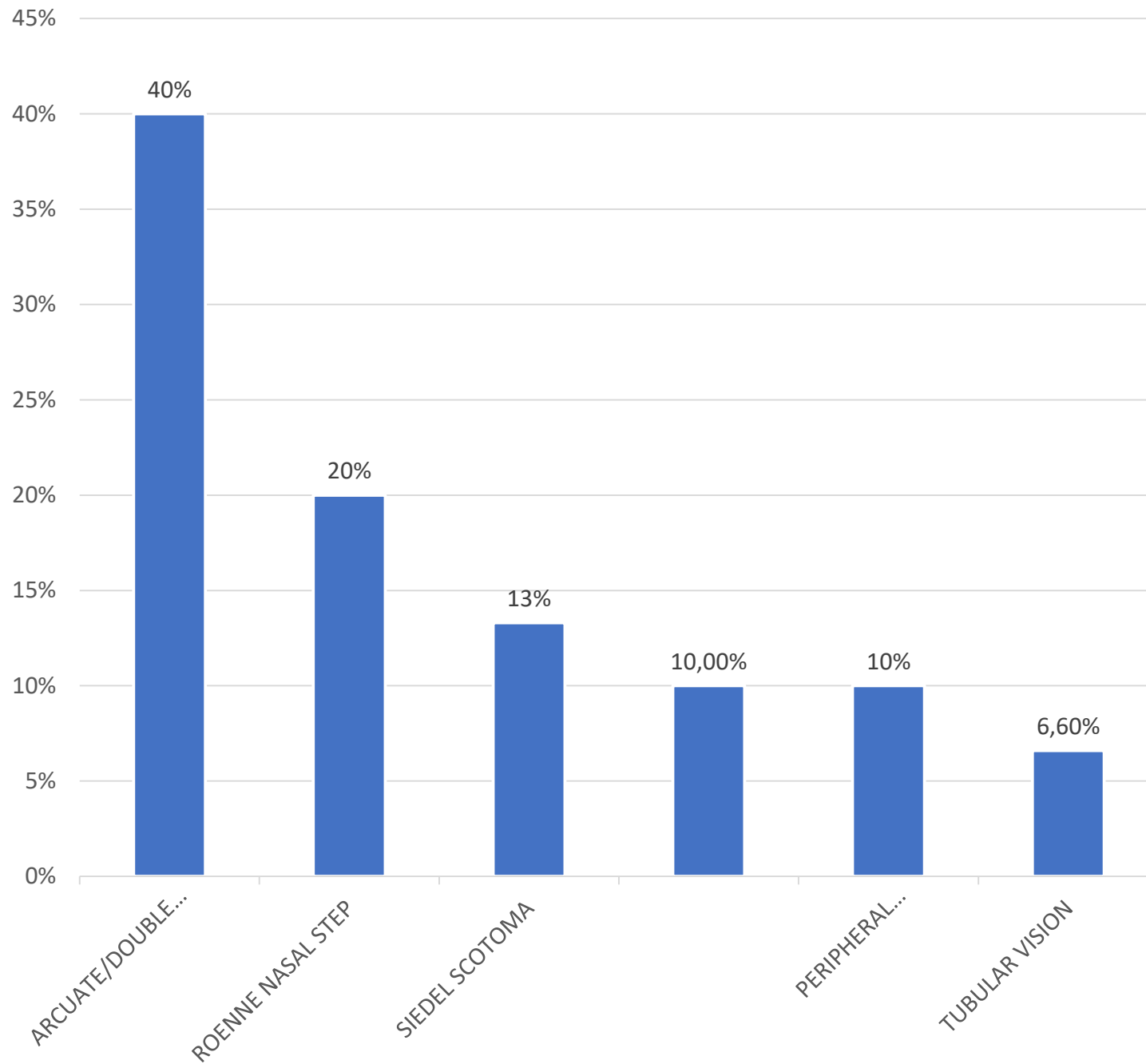
# VISUAL ACUITY



# COLOUR VISION



## Visual field defect types in glaucoma





# DISCUSSION

- In our study, **Glaucoma** was most common cause of optic neuropathy contributing about 60% of cases of which 18 were males and 12 were females.
- **Toxic/nutritional** optic neuropathy is second common cause contributing to 12% cases of which 4 were males and 2 were females.
- **Optic neuritis** is the third most common cause contributing to 10% cases of which 1 was male and 3 were females.
- **Traumatic Neuropathy** is the fourth common cause contributing to 6% cases of which all were males.



- Both the patients of **Non arteritic AION** had history of hypertension, In studies like **Tsai et al; McCulley et al** have shown that hypertension is one of the risk factors for developing NAION in patients above 50 years.
- In our study, all cases of **toxic optic neuropathy** had addiction history of tobacco and alcohol of more than 15 to 20 years of duration. In studies like **Behbehani R et al** and **Foulds WS et al** discussed that addiction of tobacco And alcohol is major risk for Toxic/Nutritional optic Neuropathies.



- The most common visual field defect in **Glaucoma** was Arcuate/Double arcuate scotomas seen in 12 patients (40%), followed by various scotomas seen in 7 patients (23.3%) which are similar in study like **Kedar et al**.
- 3(6%) cases were due to **traumatic** optic Neuropathy ,In **chaddah MR et al** study ,trauma was cause of optic Neuropathy in 7% of cases.  
In **Kabindrabajracharya et al** study, trauma was cause of optic Neuropathy in 13% of cases.
- In **Evelyn- Tai et al** study ,trauma was cause of optic Neuropathy in 12% cases.



# CONCLUSION

- **Glaucomatous** optic neuropathy is the commonest cause of preventable Blindness in my study amounting to 60% cases.
- **Toxic/Nutritional** optic Neuropathy is the second commonest cause highlighting the importance of evaluating the nutritional status and supplementing the vitamin B12/Folic acid and thiamine along with cessation of smoking.
- A good clinical history , screening methodology supported by judicious Choice of investigations and the knowledge of different types of optic neuropathies allow us to make correct diagnosis and early intervention to prevent further vision loss.



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THANK YOU

