

# A study of medical management of traumatic optic neuropathy

Thiruvengada Senthil kumar<sup>1</sup>, L Feroz Ahamed<sup>2\*</sup>

<sup>1</sup>Associate Professor, Department of Ophthalmology, Madras Medical College, Regional Institute of Ophthalmology, Chennai; Tamil Nadu. Assistant Professor, Department of Neurosurgery, Government Mohan Kumaramangalam Medical College, Salem, INDIA.

Email: [drgtvsenthilkumar@gmail.com](mailto:drgtvsenthilkumar@gmail.com)

## Abstract

Traumatic optic neuropathy (TON) is one of the devastating complications of head injury. It is noted in 0.5 to 3% of head injuries. Objectives of the study is whether medical treatment with steroid is useful or not. Totally 100 patients were included in this study. In this study, patients who received Steroid alone were treated with high dose Inj. Methylprednisolone which was later tapered and stopped. The Study concludes that in steroid alone group, the improvement of vision was not statistically significant.

**Key Words;** head injuries, inj.methylprednisolone, traumatic optic neuropathy

## \*Address for Correspondence:

Dr. L Feroz Ahamed, Assistant Professor, Department of Neurosurgery, Government Mohan Kumaramangalam Medical College, Salem.

Email: [drgtvsenthilkumar@gmail.com](mailto:drgtvsenthilkumar@gmail.com)

Received Date: 05/05/2019 Revised Date: 02/06/2019 Accepted Date: 17/07/2019

DOI: <https://doi.org/10.26611/10091127>

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08 August 2019

due to penetrating injuries, optic nerve avulsion or due to laceration caused by bony fragments. Whereas indirect injury is caused by transmission of shock waves or forces from a distant site to the optic nerve. Indirect injuries are more common than direct injuries in head injury patients. The prognosis of direct injury is very poor.

## AIMS AND OBJECTIVES OF THE STUDY

### Aims of the study

1. To study optic nerve injury in mild and moderate head injury patients admitted in the head injury ward, Rajiv Gandhi Government General Hospital.
2. To study the role of medical management

### Objectives of the study

1. Medical treatment with steroid useful or not

## MATERIAL AND METHODS

**Nature of study:** Prospective study

**Total cases studied:** 100

**Place of study:** Head injury ward, Institute of Ophthalmology, Rajiv Gandhi Government General Hospital, Chennai.

**Time of study:** August 2013 to March 2016.

In this study, patients who received Steroid alone were treated with high dose Inj. Methylprednisolone which was later tapered and stopped.

## INTRODUCTION

Traumatic optic neuropathy (TON) is one of the devastating complications of head injury. It is noted in 0.5 to 3% of head injuries. According to the studies, the incidence of optic nerve injury in head injury is 1.5%. Exact incidence of TON is difficult to determine, as many unconscious severe and critical head injured patients may die. Majority of optic nerve injuries happened because of acceleration and deceleration injury. The incidence was common among young adult males. RTA is the most frequent cause for TON, followed by falls and assaults. The optic nerve injury is often associated with significant head injury and faciomaxillary injury. Optic nerve injury can be divided into direct or indirect injury. The direct injury results from sharp object trauma, in which damage to the optic nerve occurs

## OBSERVATION AND RESULTS

In steroid alone group, about 54 patients were treated, but the improvement of vision was not statistically significant. 'P' value was >0.05 Medical treatment and visual acuity improvements.

Table 1:

Steroid treatment	Improved	Not improved	Total
Done	27	37	64
Not done	28	36	64
<b>Total</b>	<b>55</b>	<b>73</b>	<b>128</b>

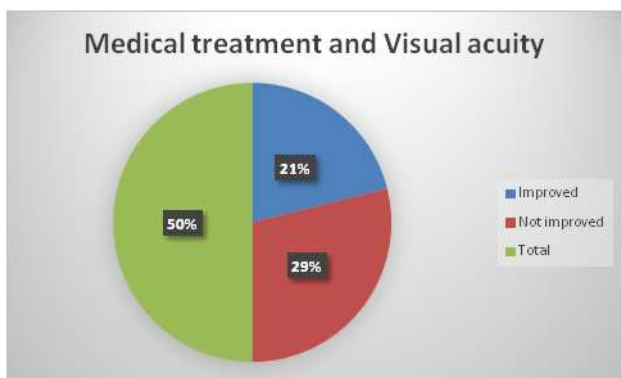


Figure 1:

## DISCUSSION

The benefits of high dose of steroids was first observed in animal studies with brain edema induced by injury. Then many authors thought that corticosteroids reduces neural tissue edema by reducing oxygen free radical formation,

stabilizing lipid membranes, reducing vasospasm, by increasing blood supply, and by preventing necrosis. This hypothesis made clinical introduction of high dose of steroids for acute spinal cord injury. NASCIS trial (National Acute Spinal Cord Injury Study) was a multicentric randomized control trial to assess the benefits of mega dose of steroid in acute spinal cord injury.

## CONCLUSION

The Study concludes that in steroid alone group, the improvement of vision was not statistically significant.

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Source of Support: None Declared  
Conflict of Interest: None Declared