



Research Paper

# A Prospective Study of Blunt Ocular Trauma and Its Management Along With Visual Out Come In a Tertiary Care Centre

DR. KAVYA BANSAL  
RSO OPHTHALMOLOGY  
SS MEDICAL COLLEGE REWA, MP

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## I. Introduction

- Blunt ocular trauma is one of the most common and significant cause of visual morbidity and visual impairment in all parts of world.
- It causes ocular damage by coup and contre-coup mechanism resulting in a wide spectrum of ocular injuries.
- Approximately 3.5-4% per 100,000 per year of patients with blunt ocular trauma have damage to visual pathways.
- Traumatic optic neuropathy is a devastating potential complication of blunt ocular trauma.
- Early detection and treatment holds the key for management and prevention of further complications.

## II. AIMS

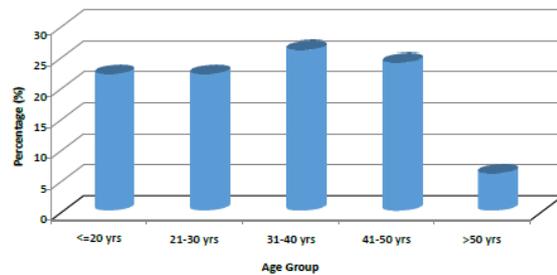
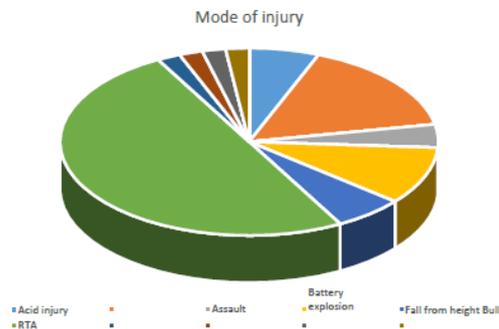
- To study the clinical profile of patients presenting with blunt ocular injuries in our tertiary care centre.
- To describe pattern of ocular injuries and classify them accordingly.
- To assess the different type of management in various type of blunt trauma injuries.
- To evaluate the patients for visual outcome after management.

## III. MATERIALSANDMETHODS

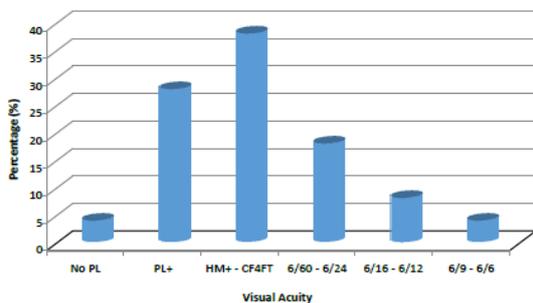
- A prospective observational study was conducted in Department of Ophthalmology atSS Medical College, REWA which included 50 cases of blunt ocular trauma from January 2021 to June 2022.
- Patients visual acuity, pupillary reactions, anterior and posterior segment pathologies and fundus findings were assessed at the time of admission and at the time of discharge.
- Subsequently follow up examination was done after 1 week of discharge.

#### IV. RESULTS AND OBSERVATIONS

➤ Majority of affected individuals were males (88%) who were in their fourth decade of life (26%).

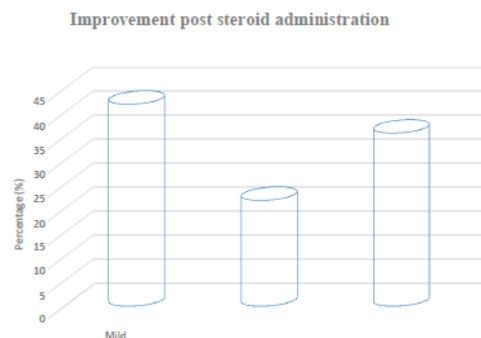


➤ In our study it was found that most common mode of injury was Road Traffic Accidents (50%) followed by



➤ 38% of the affected cases had visual acuity in the range of hand movement to counting fingers four feet on admission.

➤ Steroids were initiated as the first line of treatment and it was found that 22% of the individuals showed moderate improvement and there was mild improvement in 42% of cases. 36% cases showed no significant benefits.(NS)



#### V. DISCUSSION

- The present study includes 50 patients with blunt injury to eye with a wide range of ocular injuries associated with visual loss.
- Male population outnumbered females with the ratio of 4:1, probably due to increased exposure of men to road traffic accidents.
- In our study most commonly affected age group was 31-40 years similar to the study of Sandeep jawade et al.
- Road Traffic Accident constituted 50% of Mode of Blunt Ocular Trauma in contrary to a study conducted by Aravind Eye Hospital(farm),Nirmalan(injury due to blunt objects) and Jain B S et al(stones).

•Comparison of our study with other studies in anterior segment pathologies

Ocular involvement	SumanaJKetal[1]	Zagelbaumetal[2]	SandeepJawadeetal[3]	Ourstudy
<i>Cornealabrasion</i>	21.8%	23%	16%	24%
<i>Sub conjunctival haemorrhage</i>	37.5%	23%	66%	82%
<i>Ecchymosis and lid edema</i>	62.5%	40%	82.5%	86%
<i>Lidlaceration</i>	31.2%	13%	18%	74%
<i>Hyphaema</i>	12.5%	5%	31%	64%
<i>Irisinjury</i>	15.5%	4%	13%	4%
<i>Lensdislocation</i>	3.1%	2%	0.9%	2%
<i>Cornealedema</i>	---	---	---	24%

[1]Pai SG, Kamath SJ, D'Souza S and Dudeja L. A clinical study of blunt ocular trauma in a tertiary care centre. Online J Health Allied Scs. 2013;12(2):10.

[2] Zagelbaum BM, Tostanoski JR, Kerner DJ, Hersh PS. Urban eye trauma. A one-year prospective study. Ophthalmology. 1993 Jun; 100(6):851-856.

[3] Jawade, S., Dagwar, R., & Chauhan, R. Clinical Profile and Visual Outcome of Blunt Ocular Trauma in a Tertiary Care Centre of Central India: A Prospective Study. International Journal of Medical Science and Clinical Invention, 7(11), 5063–5069. <https://doi.org/10.18535/IJMSCI/V7I11.01>

•Comparison of our study with other studies in posterior segment pathologies

Ocular involvement	SumanaJKetal[1]	Zagelbaumetal[2]	SandeepJawadeetal[3]	Ourstudy
<i>Retinal/choroidal haemorrhage</i>	---	2%	0.9%	4%
<i>Berlins edema</i>	6.25%	5%	7%	36%
<i>Vitreous haemorrhage</i>	3.1%	2%	3.88%	30%
<i>Retinal detachment</i>	---	1%	2%	12%
<i>Ruptured globe</i>	---	1%	---	2%
<i>Choroidal rupture</i>	---	1%	0.9%	2%

[1]Pai SG, Kamath SJ, D'Souza S and Dudeja L. A clinical study of blunt ocular trauma in a tertiary care centre. Online J Health Allied Scs. 2013;12(2):10.

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**Final visual outcome**

- ✓ In our study the affected individuals presented to us with complain of diminution of vision, pain, redness, foreign body with majority of the patients having visual acuity between hand movement to counting finger four feet(38%).
- ✓ Majority of the patients on their fundus examination had faint glow (24%),temporal pallor of optic disc(24%)and no glow (22%).
- ✓ Around 30% of the patients had vitreous haemorrhage.
- ✓ All the patients were managed conservatively with steroids being the corner stone of the management. Antibiotic eye drops and pad and bandaging was also done.
- ✓ Cases who were started on steroids treatment showed visual improvement; mild(42%) moderate(22%) and this was found to be statistically significant(p<0.05)

- ✓ Majority of the patients who showed improvement at the time of one week of follow up had visual acuity between 6/12-6/24(12 cases)
- ✓ Patients with posterior segment pathologies had poor prognosis as compared to anterior segment pathologies.

## **VI. CONCLUSION**

- ✓ Even though blunt trauma of the eye is most common, a large population are being visually handicapped.
- ✓ Road Traffic Accident was found to be the major culprit causing traumatic optic neuropathy, a dreadful complication leading to complete blindness.
- ✓ Precautionary measures (goggles, face shields, helmets) should be taken by high-risk group i.e. males of fourth decade.
- ✓ Early recognition and initiation of treatment can lead to satisfactory visual outcome improving the quality of life of the individual.