



## OCULAR MANIFESTATIONS IN ROAD TRAFFIC ACCIDENT PATIENTS ATTENDING A TERTIARY CARE CENTRE IN KASHMIR

### Ophthalmology

**Dr. Haziqa  
Zahoor\***

Postgraduate, Department of Ophthalmology, Government Medical College, Srinagar  
\*Corresponding Author

**Dr. Afroz Khan**

Professor, Department of Ophthalmology, Government Medical College, Srinagar

**Dr. Aakifa  
Maqbool**

Consultant, Department of Ophthalmology, Government Medical College, Srinagar

### ABSTRACT

**Background:** Ocular trauma due to road traffic accidents (RTA) can range from trivial subconjunctival haemorrhage to vision threatening injury. **Aim:** To determine ocular manifestations due to RTA in patients attending a tertiary care centre in Kashmir. **Methods:** The study was conducted on 80 patients of ocular trauma due to RTA attending the Department of Ophthalmology, Government Medical College, Srinagar over a period of 2 years from September 2019 to September 2021. Patients with ocular injuries due to causes other than RTA were excluded from the study. A detailed history was taken from all the patients and a detailed ocular examination was done including anterior segment and posterior segment examination. **Results:** Our study found that most of the patients were in the age group of 20-40 years with higher proportion of male patients being affected as compared to female patients, the ratio being 60:20. Vehicular accidents involving 2 wheelers accounted for 75% cases. Right eye was involved in 65% cases and left eye was involved in 25% cases. Bilateral involvement was seen in 10% cases. Most common ocular injury following RTA in our study was subconjunctival haemorrhage in 85% cases. Majority of patients (60%) had visual acuity of 6/9-6/36 at the time of presentation, 5% patients had visual acuity of counting fingers, 1.25% patients had visual acuity of PL+ whereas 33.75% cases had visual acuity of 6/6 at the time of presentation. **Conclusion:** Our study concluded that ocular trauma due to RTA is more common in males with two wheelers being the most common cause of vehicular accidents. Ocular trauma following RTA can lead to vision threatening complications. So, it is important to establish effective safety measures and encourage regular adherence to road safety behaviour.

### KEYWORDS

Ocular trauma, road traffic accidents

### INTRODUCTION

According to world health organization, road traffic accident (RTA) is the sixth leading cause of death and accounts for major part of human suffering all over the world. Ocular injuries due to RTA are regarded as one of the common causes of ocular morbidity and unilateral blindness<sup>[1]</sup>. Ocular involvement in road traffic accidents may involve the eyelids, lacrimal canaliculi, orbital wall, conjunctiva, cornea, sclera and the extra-ocular muscles. There may also be uveal tissue prolapse, vitreous loss, traumatic cataract, retinal detachment, vitreous haemorrhage, choroidal rupture, optic nerve avulsion or a ruptured globe.<sup>[2]</sup> Head trauma following RTA with the eyes being involved in most of the head injury patients makes it necessary that adequate ophthalmic assessment and appropriate treatment is undertaken in a timely manner so as to prevent permanent visual deficit in these patients.<sup>[3]</sup> All the patients with head injury should be examined for eye signs on both the first presentation and follow-up visits.

### METHODS:

This study was conducted on 80 patients of ocular trauma due to road traffic accidents attending Department of Ophthalmology, Government Medical College, Srinagar over a period of 2 years from September 2019 to September 2021 after obtaining ethical clearance from Institutional Ethical Committee. Patients with ocular injuries due to causes other than RTA, unconscious and non-cooperative patients were excluded from the study. A detailed history was taken from all the patients with regard to age, presenting symptoms, type of vehicle used. Detailed ocular examination was done which included torch light examination, uncorrected visual acuity (UCVA), best corrected visual acuity (BCVA), slit-lamp examination and posterior segment examination. X-ray skull, CT-scan and B-scan ultrasonography were advised whenever indicated. Patients were followed up at 1 week and then again at 4 weeks. Patients with ocular trauma requiring repair were admitted as in-patients for further management and specialized care.

### OBSERVATIONS AND RESULTS:

Our study indicated that most of the patients were in the age group of 20-40 years (70%). There were 60 (75%) male patients and 20 (25%) female patients. High incidence of ocular injuries were seen due to vehicular accidents involving 2 wheelers accounting for about 60 (75%) cases, majority of whom were not using safety measures accounting for about 48 (80%) cases out of 60 patients. Right eye was involved in 52 (65%) cases whereas left eye was involved in 20 (25%)

cases. Bilateral involvement was seen in 8 (10%) cases. Most common ocular injury following RTA in our study was subconjunctival haemorrhage (85%) followed by lid edema and periorbital ecchymosis seen in 78.75% cases (Table-1). Blunt ocular trauma following RTA was seen in 50 (62.5%) cases whereas penetrating ocular trauma was seen in 30 (37.5%) cases. Anterior segment involvement was seen in 48 (60%) cases, posterior segment involvement was seen in 5 (6.25%) cases whereas 27 (33.75%) cases had external soft tissue injury. Majority of patients (60%) had visual acuity of 6/9-6/36 at the time of presentation, 4 (5%) patients had visual acuity of counting fingers, 1 (1.25%) patient had visual acuity of Perception of light only (PL+) whereas 27 (33.75%) cases had visual acuity of 6/6 at the time of presentation.

**TABLE 1: Ocular manifestations following RTA in study eyes**

| Ocular manifestation                          | No. of cases (n) | Percentage (%) |
|-----------------------------------------------|------------------|----------------|
| Lid edema, ecchymosis                         | 63               | 78.75          |
| Subconjunctival haemorrhage                   | 68               | 85             |
| Lid laceration                                | 20               | 25             |
| Retained foreign body (corneal, conjunctival) | 10               | 12.5           |
| Retained intraocular foreign body             | 1                | 1.25           |
| Traumatic mydriasis                           | 13               | 16.25          |
| Traumatic hyphaema                            | 4                | 5              |
| Corneo-scleral perforation                    | 20               | 25             |
| Vitreous Haemorrhage                          | 4                | 5              |
| Traumatic optic neuropathy                    | 1                | 1.25           |
| Orbital Fracture                              | 6                | 7.5            |

### DISCUSSION:

Road traffic accidents are of common occurrence in day to day life causing mild to severe human injury including ocular injuries.<sup>[2]</sup> Ocular trauma following RTA can result in wide spectrum of tissue lesions ranging from superficial injury to vision threatening complications.<sup>[4]</sup> Our study found that majority of patients were in the age group of 20-40 years with males being affected more as compared to females. Our findings are consistent with studies conducted by Dubey S et al<sup>[5]</sup> and Cillino S et al.<sup>[5]</sup> Most of RTA cases causing ocular trauma were due to two wheelers which is consistent with the study conducted by Dubey S et al.<sup>[4]</sup> Right eye was affected in majority of the cases as compared to left eye which is consistent with the studies conducted by Shtewi M EI et al<sup>[2]</sup> and Sujatha M. A R et al.<sup>[6]</sup> Most common ocular lesion following RTA in our study was subconjunctival haemorrhage followed by lid

edema and periorbital ecchymosis which is consistent with the study conducted by Dubey S et al.<sup>[4]</sup> Anterior segment manifestations were more common than posterior segment manifestations in our study which is consistent with the study conducted by Reddy DC et al.<sup>[1]</sup> Majority of patients (60%) in our study had visual acuity of 6/9-6/36, 5% patients had visual acuity of counting fingers, 1.25% patients had visual acuity of PL+ whereas 33.75% patients had visual acuity of 6/6 at the time of presentation. Our findings are consistent with the study conducted by Shtewi M EI et al.<sup>[2]</sup>

### CONCLUSION:

Our study concluded that majority of patients with road traffic accidents presenting with ocular trauma were males with two wheeler accidents being the most common mode of vehicular accidents. Anterior segment complications were more common than posterior segment complications in our study. Ocular injuries due to RTA result in a spectrum of damage to intra-ocular structures and adnexa, therefore raising public awareness about safe driving and use of protective wear can decrease the incidence and severity of ocular trauma.

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