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Original Research Article

Prospective Study of Ocular Manifestation of Road Traffic Accidents on East Coast Road Presenting to Tertiary Care Centre in Tamilnadu

Achanti Swathi, Adnan Matheen, Charanya C, Stephen Sudhakar

Department of Ophthalmology, Chettinad Hospitals and Research Institute.

Corresponding Author: Charanya C

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ABSTRACT

Aim: To study the pattern of ocular injuries in RTA and to analyse the factors which influence them.
Methods: All ocular injuries presenting to the outpatient Department of ophthalmology and emergency trauma center at Chettinad Medical College and Hospital who gave their consent were included in the study and subjected to detailed history and examination.
Results: Out of 200 patients in our study 132 were males 63 females and 5 children. Majority were in age group of 20 to 30 years. Most common vehicle involved were 2 wheeler vs 4 wheeler followed by 4 wheeler vs 4 wheeler. Most of the injuries were found on weekends (155) and under the influence of alcohol (109). 142 presented within 24 hours.
Conclusion: 2 wheeler accidents more in young males. In order to decrease ocular injuries from RTA proper road safety measures like wearing seatbelts, helmets, prohibiting alcohol consumption before driving should be made mandatory and strict law enforcing them be made.

Key words: Road traffic accident, ocular injuries, four wheeler, lid edema.

INTRODUCTION

Ocular trauma is a preventable public health problem throughout the world. It is one of the common causes of ophthalmic morbidity and mono-ocular blindness in all parts of the world. [1] The global annual incidence of ocular trauma is around 55 million, of which 7,50,000 require hospitalization each year. [2] Road traffic accident is one of the important causes of ocular trauma. RTAs will be counted as one of the top ten public health problems in the coming decade.

Road traffic accidents (RTA) are common occurrences every day. With the ever increasing number of various road transport vehicles, and the increasing number of new drivers, traffic accidents keep on increasing, causing mild to severe human injury, including injuries to the eyes. Eye injuries, often resulting in some visual loss, create enormous costs both to the victim and to society. There is great need for more active interest in the prevention of eye injuries.

State highway 49 also known as EAST COAST ROAD is a two lane highway in Tamil Nadu, India built along the coast of Bay of Bengal is well known for its increased number of casualties every day. Studies reveal that 39% of road traffic accidents involve ocular injuries. [3] This study would help to give a brief statistics on the incidence and pattern of ocular injuries during road traffic accidents that occur on ECR.

Objectives of the study:

1. To study the incidence of ocular injuries in vehicular accidents

occurring on East Coast Road (Tamil Nadu)

2. To determine the pattern of clinical presentation of ocular injuries due to vehicular accidents.
3. To determine the most common cause of accidents and the factors that influences them.

MATERIALS AND METHODS

All ocular injuries presenting to the outpatient Department of ophthalmology and emergency trauma center at Chettinad Medical College and hospital who gave their consent were included in the study. Cases of ocular injury due to causes other than vehicular accidents are excluded in this study.

Meticulous history taking and thorough examinations were performed in all the cases and data were recorded in a pretested per forma, which included demographic variables, type of vehicle, mode of accident, initial complaints, presenting complaints, time interval between injury to reporting etc. and visual acuity was recorded. Detailed Ophthalmic examination of all the patients including slit lamp examination, 90D examination and indirect ophthalmoscopy were carried out. B-scan ultrasonography was performed in those cases with media opacities who were suspected of having posterior segment abnormalities. Depending on the presentation, patients were subjected to detailed examination by ENT surgeon, General surgeon, maxillofacial surgeon and General physician if required.

RESULTS

Out of total 200 cases of road traffic accidents in our study, 132 (66%) were males, 63 (31.5%) were female and 5 were children. Majority 96 (48 %) of the RTAs happened among 21-30 years age group subjects showing the common adventurous nature among the age group. Out of 200 subjects who sustained ocular injuries, 4 wheeler vs 2 wheeler was 150 followed by 4 wheeler vs 4 wheeler 24. 2 wheeler vs pedestrian was least with 10. Out of 200 injuries 155 happened on weekends. 91 were under the influence of alcohol so clearly showing that alcohol is a important cause for the accidents and serious action needed for the same.

The most common anterior segment manifestations were lid edema, lid laceration, orbital rim fractures, Extraocular movement restriction, iridodialysis and lens dislocation. The posterior segment manifestations seen were commotion retinae, vitreous hemorrhage and optic neuropathy. Open globe injuries were less (17) compared to closed globe injury (183).

142 presented to hospital within 24 hours since injury showing that people are aware to go to hospital early and the anxiety is there among people as eye is an important for vision.

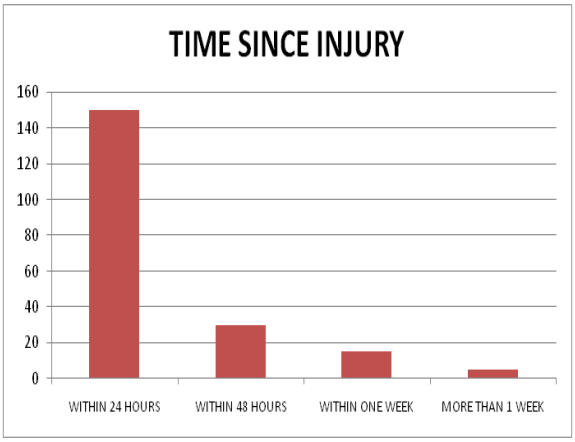
Table 1: showing type of injury

Type of ocular trauma	Number of people	Percentage (%)
LID EDEMA	60	30
LID LACERATION	50	25
ORBITAL FRACTURES	58	29
SUBCONJUNCTIVAL HEMORRHAGE	45	22.5
HYPHAEMA	20	10
IRIS INJURY	5	2.5
LENS DISLOCATION	1	0.5
EOM RESTRICTION	17	8.5
COMMOTIO RETINAE	6	3
VITREOUS HEMORRHAGE	2	1
OPTIC NEUROPATHY	6	3
CORNEAL TEAR	8	4
SCLERAL TEAR	4	2
IOFB	1	0.5

Only 21 of people in 2 wheeler accidents wore helmets and only 9 wore seat belts showing that the awareness among people regarding safety measures is still poor even in major cities like Chennai.

Table 2: showing presenting visual acuity

Visual acuity	No. Of patients
6/6-6/18	95
<6/18-6/60	76
<6/60-3/60	12
<3/60-1/60	10
<1/60-PL+PR+	7



Graph 1: showing time presented to hospital since injury

Figure 1: showing anterior segment manifestation

Figure 2: showing lid laceration and orbital fracture

Figure 3: showing iris injury

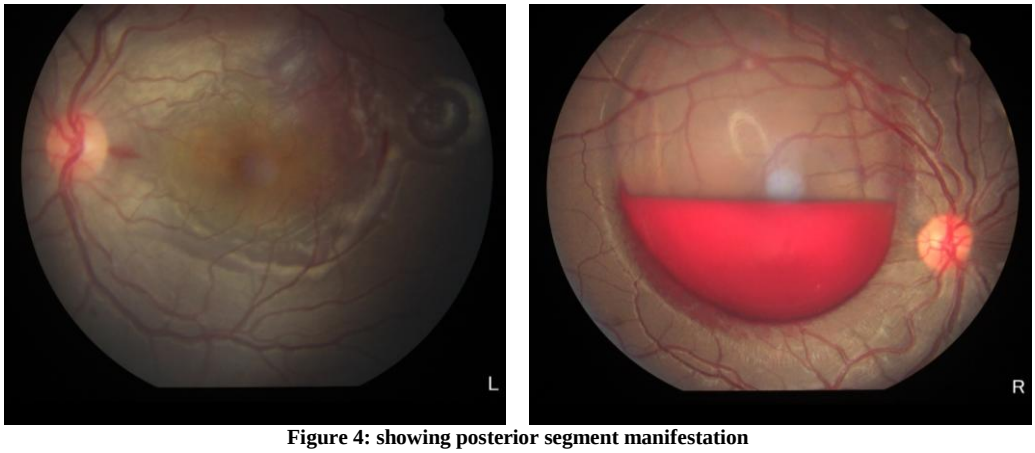


Figure 4: showing posterior segment manifestation

DISCUSSION

Eyes are highly developed and delicate special end organ and a trivial injury can lead to severe damage and loss of vision. Totally 200 patients were included in this study out of which 132 were males and 63 were females and 5 were children. The same was cited by P. B. Johnston in his study on Eye injuries in Northern Ireland In this study the peak age of RTA was found to be 21-30 years and I R Ezegwui. [4] Present study observed 91 of ocular injuries were while driving under the influence of alcohol. Same thing was also observed by Millo T et al in their study on incidence of alcohol use in road traffic accidents in south Delhi. [5]

Closed globe injury was found to be more common in our study (183) compared to open globe injuries which is similar to the previous studies C. M. Gully. [6] Similarly the frequency of different types of ocular injuries in RTA as found in our study were similar with the results founded in the previous studies done by Boo Sup Oum, Eknock who founded in their respective study, that the adnexal injuries like lid lacerations and ecchymosis are more common than the penetrating injuries. [7,8]

CONCLUSION

Two-wheeler accident is common and an important cause for loss of vision following RTA. Hence, primary preventive approach through behaviour change communication among the bikers for promoting safe riding practices and strict implementation of traffic rules like riding at safe speed, wearing helmet and avoiding alcohol before driving are needed to prevent RTA associated blindness. Persons sitting in front seats more commonly sustain ocular trauma so the use of safety seatbelts in four wheelers must be made compulsory. [9,10]

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