



PROSPECTIVE EPIDEMIOLOGICAL STUDY OF OCULAR TRAUMA AT TERTIARY CENTRE

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KEYWORDS :

INTRODUCTION

Ocular trauma is a significant and preventable cause of visual impairment. As per WHO the annual incidence of ocular trauma is approximately 55 million and 5% to 16% of them need ophthalmology consultations. Also it is a one of the most common causes of acquired blindness in children.

Most common cause of ocular injury was sports-related injury (spinning top, cricket ball) followed by firecracker-related injuries.

Ocular injuries have been broadly classified into two forms open or closed globe and Adnexal injuries Birmingham eye trauma terminology satisfies all criteria for unambiguous standard terminology by: providing a clear definition for all injury types and placing each injury type within the framework of a comprehensive system⁴

The OTS is a scoring system that includes VA at presentation and the extent of ocular trauma, as well as the presence or absence of globe rupture, endophthalmitis, retinal detachment, and relative afferent pupillary defect. A higher OTS score is typically associated with a better prognosis.

Health inequalities exist across the entire spectrum of the healthcare service, with increasing evidence to suggest that individuals living in deprived areas disproportionately experience the burden of trauma, paucity of access to eye and healthcare services, ill health, morbidity and mortality.

Objective:

To estimate the prevalence and type of ocular trauma in patients admitted and referred to Department of ophthalmology, RNT Medical College, Udaipur.

Methodology:

This hospital based prospective study conducted at ophthalmology department, RNT Medical college and Hospital Udaipur, over a period of 18 months. (May 2020 – Nov 2021).

Patients with Ocular injury irrespective of age, sex included in this study. Patients of ocular injury having associated with severe systemic injury and who had been operated elsewhere, attending our department for follow up only were excluded from this study. Total 150 patients were enrolled and thorough, clinical examination with torch light and slit lamp examination was carried out. Slit lamp examination included

documentation of size of tear, its location, involvement of visual axis, iris prolapse, cataract formation and intra-ocular foreign body (IOFB).

Detailed history was taken with special attention to mode of injury, time of presentation to the hospital after the injury to the eye, ocular structure involved, and the place of injury. Visual acuity was checked using Snellen's visual acuity chart and improvement was noted after 1st week, 4th week and 6th week. Intraocular pressure was recorded and other scan (X-ray, CT, MRI) were performed if needed

Management strategy:

Corneal foreign body removed with 26&1/2G needle under local anesthesia. Lid tears, Corneal tears, limbal tears, conjunctival and scleral tears were repaired suturing. Post operative treatment as per requirement was administered in patients. Traumatic cataract was removed with either phacoemulsification technique or via a manual small incision cataract surgery (sics). Surgical repair to restore the anatomy of the eye was performed whenever indicated.

OBSERVATION AND RESULT

The study contain 150 patients with ocular trauma

Sociodemographic distribution;

age of the patients was ranged from 3 year to 70 years old. The incidence of ocular injuries was found to be highest in the age group of 25-34 years old (20.67%) followed by age group of 15-24 years and children of less than 14 years old, both standing at 18% of the cases. Among them majority of the cases were male (71%).

Most of the cases (59%) were from the rural area and the most common place of injury is home with 74 patients incurring injury at home (49%) followed by work (29%). The other places where patients suffered from injuries included places like in a road traffic accident (14%) and at school in case of children (3%).

Type of injury and interval between the occurrence of the trauma and the time taken of the patient to present to the OPD depicts in figure no.1 and table no.1 respectively. In respect to segment involvement, 91.33% injuries involved the anterior segment of the eye and the rest 8.67% patients had posterior segment involvement. The cornea is the most common ocular structure to be injured with 71 (47.33%) cases recorded in the study. The outward layer of the cornea makes it more prone to

injuries followed by conjunctiva (13.33%) and lids and periorbital region (8.67%). Other ocular structures to be involved were the corneo-scleral junction (limbus), lens, posterior structures like choroid, retina and vitreous. However the majority of the patients presenting to the OPD did not require admission due to the trauma to the eye, only required admission.

Visual at presentation and after treatment (at 6 weeks) received by the patient depict in table no. 2.

55% patients showed an improvement in the final visual acuity recorded at the sixth week of followed as against to 42% who showed no improvement in their final visual outcomes. 4 patients were lost to follow up.

DISCUSSION

It has been observed that the children and young adults are usually more prone to ocular injuries. This may be due to they are more exposed to the risk of injuries, lack of awareness and lack of using adequate protection by them.

The high rate of occurrence of ocular trauma in young adults is primarily due to occupational hazards. It generally occurs at work place and also in road traffic accidents. It can also be attributed to their lack of adhering to the safety rules suggested by the authorities.

As per our study the incidence of ocular trauma decreases with this could be because of the reduced outdoor activities opted for people in the age group.

In this study we observed that the majority of the patients were male and it could be due to the greater arc of outdoor activity conducted by men. Also the higher number of male drivers in India can also be taken into account as to why more men are involved in road traffic accidents.

A vast portion of injuries occurred in farmers and were agriculture related as not much of agricultural practices in our country is mechanized and older methods and practices makes the farmers more susceptible to injury. The difference in presentation can be attributed to the sort of work undertaken by rural population without much protection gears available to them nor there strict safety measures.

Usha Vasu et al. reported that out of 33% injuries related to work place, 95% were males and 79% were between 16-45 years of age. This has been reflected in our study too which may be due to male dominance in traditional and cultural settings of our society.

Park sung et al reported closed globe injuries (85.8%) were more common than open globe injuries (14.2%) in patients presenting to emergency department. T F Babar et.al. reported that open globe injuries (46.18%) are more common than closed globe Injuries (42.98%).

Malik SRK et al. reported that 83% cases attended the hospital within first 24 hours Trevor Roper PD et.al. also reported that the 76% patients reported to the hospital with 24 hours of injury. This behavior of early presentation of patients to the hospital results in good visual prognosis as adequate and timely treatment is given to them. Early presentation to the hospital has also been made feasible due to the many government run schemes to deliver to patients to the hospital in case of RTA.

The cornea was the most common ocular structure to be injured. The outward layer of the cornea makes it more prone to injuries followed by conjunctiva (13.33%) and lids and periorbital region (8.67%). The protruding walls of the orbit

and the exterior location of the lids makes them more susceptible to trauma.

in the study, 83(55%) patients showed an improvement in the final visual acuity recorded at the sixth week of followed as against to 63(42%) who showed no improvement in their final visual outcomes. 4 patients were lost to follow up. The cases which did not show any improvement if vision were patients with the involvement of the posterior segment, more than the anterior segment, except with patients incurring open globe injuries with iris prolapse or large, full thickness corneal thickness which involved the visual pathway.

Most injuries 43(29%) were due to blunt injury (including fall, assault) followed by a metallic foreign body (19%) getting imbed in cornea and causing trauma to the eye. Similar results were reflected in study done by Charles Omalase (2011) where they documented 84% injuries to be blunt, 12% penetrating injuries. Perforating injuries like injuries sustained by arrows, pencils or sticks are accounted to be 6.66%.

CONCLUSION

Male gender and person below age group of 30 are more prone to acquire ocular injuries. Majority of the patients not required admission in the hospital and most of them showed improvement in visual activity at the end of 6 weeks.

Good prognosis was observed in patients presenting early to the hospital however patients presenting to the hospital within 5 days of injury also showed satisfactory visual prognosis.

Conflict of interest- No

Acknowledgment- No

Table no. 1 Time Interval Following Trauma

Time Interval	No. of cases	Percentage
Less than 24 hrs.	83	55.33%
1-5 days	60	40%
5 days to 1 month	4	2.67%
1 month to 12 months	1	0.67%
More than 12 months	2	1.33%
Total	150	100%

Table no. 2 Visual at presentation and after treatment (at 6 weeks)

Visual acuity	At presentation	Percentage	After treatment	Percentage
6/6-6/18	40	26%	75	50%
6/18- 6/60	26	17%	28	18.6%
3/60- 6/60	22	14.6%	08	5.3%
<3/60	58	38.6%	35	23.3%
Unavailable	04	2.66%	04	2.66%
Total	150	100%	150	100%

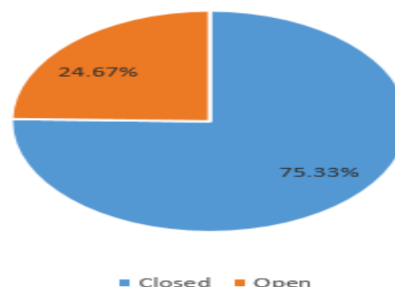


Figure no. 1 Type of injury

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