



CLINICAL AND DEMOGRAPHIC PROFILE OF OCULAR TRAUMA IN PATIENTS ATTENDING A TERTIARY CARE CENTRE.

Dr. Deepsikha Saikia	Assistant Professor Department Of Ophthalmology, Jorhat Medical College And Hospital, Jorhat, Assam
Dr. Marelio K	Post Graduate Trainee Department Of Ophthalmology, Jorhat Medical College And Hospital, Jorhat, Assam
Dr. Samadrita Paul Choudhury	Post Graduate Trainee Department Of Ophthalmology, Jorhat Medical College And Hospital, Jorhat, Assam

ABSTRACT

Aim and objective: - To determine the pattern of ocular injuries and identify the most common cause of ocular injury attending tertiary eye care centre. **Introduction:** - Although the eyes make up only 0.1% of the body's surface, they are crucial for vision, a key part of daily life. Ocular trauma, a leading cause of preventable blindness and visual impairment, is under-recognized and lacks comprehensive population-based data, especially in developing countries, despite its significant socioeconomic impact. **Materials And Methods:** - A Hospital based cross sectional study conducted on 240 patients, during a period of 6 months. This study was conducted based on the age, gender, visual acuity, time of presentation, mode of ocular injury, type of ocular injury, subtypes and laterality. **Results:** - Of the total 240 patients, the age group 21-30 years were the most affected with 64 cases (26.67%), the male gender made up the majority of cases with 178 numbers (74.1%), and the most common mode of injury was RTA with 116 (48.33%) of which lid laceration making up for 126 cases (52.50%). **Conclusion:** - RTA contributing to the majority of ocular injury cases in young adults is a matter of great concern, it not only affects the vision, but also impacts overall productivity at work. Creating road and driving safety awareness to youngsters must be made a priority by the administration.

KEYWORDS : RTA (Road traffic accidents), ocular trauma, driving safety awareness.

INTRODUCTION:

The eyes although represent only 0.1% of the total body surface area, interestingly, provides one of the major routes of information input, making vision an indisputable part of our day today activities.

Ocular trauma though being a major cause of preventable monocular blindness and visual impairment in the World is one of the most under-recognized.^{1,2} Despite its public health importance, there is relatively less population- based data on the magnitude and risk factors for ocular trauma, specially from developing countries.^{3,5}

Due to the reason that most ocular injuries are closed globe, this could be the reason why vision loss is not significantly affected, also lid laceration making up for majority of the cases in closed globe injury subtypes which is a reason for vision sparing.⁶ However, more severe injuries like globe rupture requires urgent management to prevent visual loss.⁷ The outcome of vision after an ocular injury could be prognosticated with the early time of presentation and a good visual acuity at presentation.⁸ Ocular trauma causes a great socioeconomic impact. Population-based epidemiological studies in Andhra Pradesh and Tamil Nadu have found prevalence rates of ocular trauma as 2-10%. In addition to the physical and psychological trauma of eye injuries to the individual, the direct and indirect financial costs to the society are enormous. Blindness resulting from trauma has prevalence rates of 0.6%-0.8%.⁹

The use of eye protective devices in India is very low. Prevention of ocular injuries should form the basis of management for which collection of data is a must. Seeing the seriousness and enormity of ocular trauma, this study was undertaken to know the prevalence, cause of injury, and clinical and demographic profile of ocular trauma patients presenting to Jorhat Medical College and Hospital, from this region so that strategies can be planned for the prevention and management of ocular trauma in a better way.

Aim And Objective:

To determine the pattern of ocular injuries and identify the common cause of ocular injury attending tertiary eye care centre.

Materials And Methodology:

Materials: This study comprised of 240 consecutive patients who presented to the Emergency and Outpatient Department of Ophthalmology, Jorhat Medical College and Hospital, Jorhat, Assam between March 2023 to August 2023.

Study design: Hospital-based cross-sectional study

Study setting: Ophthalmology outpatient department and Emergency, Jorhat Medical College and Hospital, Assam

Duration of study: 6 months (March 2023 to August 2023.)

Source of data: Data were collected in preform proforma from the patients presenting to Emergency and outpatient department, Jorhat Medical College and Hospital.

Sample Size: All consecutive patients with ocular injury presenting to outpatient department and emergency department during the study period.

Selection of cases: Selection of case was made on the basis of history, clinical features, and examination findings.

Inclusion criteria:

1. Age between 0-80 year
2. All gender
3. All patients with direct or indirect loss of vision due to any form of injury.

Exclusion criteria:

1. Unconscious patients
2. Patients confined to bed (non-ambulatory patients)
3. Patients unwilling to participate or unwilling to give consent for the study.

Ethical consideration:

This study proposal was submitted in the Institutional Ethical

Committee of Jorhat Medical College and Hospital, Jorhat for review and appraisal and the study commenced after approval.

Methods: The purpose of study was explained, informed consent was taken, detail history, examination and investigation was done on case-to-case basis.

Consent:

A written and informed consent was taken from the participants for conducting the study

Diagnosis:

Detailed history of trauma was obtained under the following headings:

- Name
- Age
- Gender
- Occupation
- Cause of trauma
- Time of trauma
- Mechanism of trauma
- Mode of trauma
- Place of trauma
- Laterality
- Visual acuity

Instruments Used: For ocular examination the following was used

1. Snellen's Visual Acuity Chart/Landolt C/E-chart.
2. Fluorescein strip
3. Anterior segment slit lamp bio microscope.
4. Slit lamp bio microscope using +90D lens.
5. Goldmann Applanation Tonometer / Schiottz tonometer/ Non-Contact Tonometer
6. Direct Ophthalmoscope.
7. Indirect ophthalmoscope with 20D lens.
8. SD-OCT, whenever indicated.
9. Ultrasonography(SAMSUNG RS 80A), whenever indicated.

RESULTS:

1. Maximum patients were in the age group of 21-30 year (26.67%)

Table 1: Age distribution among affected population.

Age Distribution (in years)	Number of patients	Percentage
0-10	22	9.17
11-20	22	9.17
21-30	64	26.67
31-40	62	25.83
41-50	30	12.50
51-60	26	10.83
61-70	12	5
71-80	2	0.83
Total	240	100

Age distribution in year

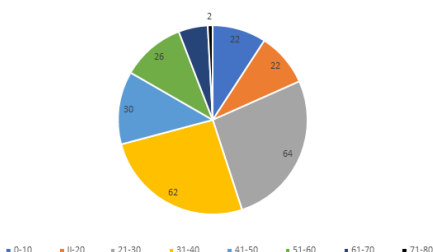


Figure 1: Age distribution among affected population.

2. Male gender accounted for 74.10% of ocular trauma

Table 2: Gender distribution in affected population.

Gender Distribution (in year)	Number of patients	Percentage
Male	178	74.17
Female	62	25.83
Total	240	100

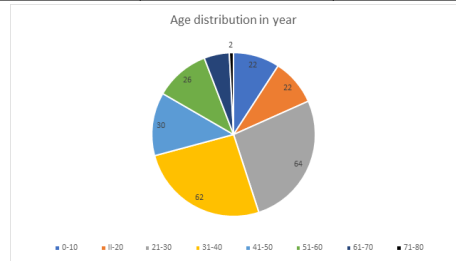


Figure 2: Gender distribution in affected population.

3. 90.83% of the total had vision above 3/60

Table 3: Vision in affected population

Uncorrected visual acuity	Number of patients	Percentage
>3/60	218	90.83
<3/60	22	9.17
Total	240	100

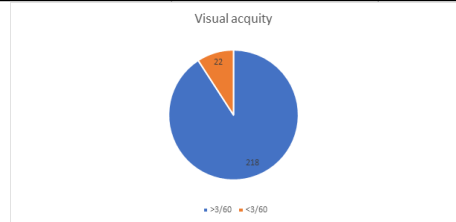


Figure 3: Vision in affected population.

4. 65.83% patients presented between 8:01pm to 2:00am

Table 4: Time of presentation of affected population.

Time	Number of patients	Percentage
8:00am-2:00pm	48	20
2:01pm-8:00pm	28	11.67
8:01pm-2:00am	158	65.83
2:01am-7:59am	6	2.5
Total	240	100

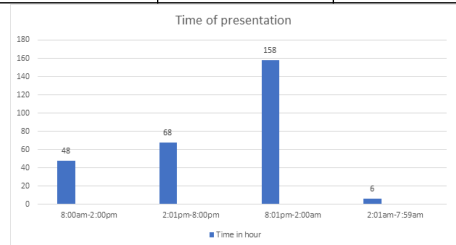


Figure 4: Time of presentation of affected population.

5. Closed globe injury accounted for 96.67% in types of injury

Types of injury	Number of patients	Percentage
Open globe	8	3.33
Closed globe	232	96.67
Total	240	100

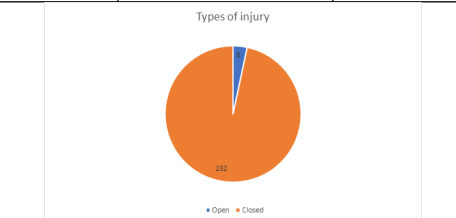


Figure 5: Types of injury

6. Road traffic accident (RTA) accounted for 61.67% of mode of ocular trauma

Table 6: Mode of injury in affected population.

Mode of injury	Number of patients	Percentage
Road traffic accident	116	48.33
Assault	44	18.33
Occupational	60	25
Accidental self-injury	20	8.33
Spontaneous	0	0
Total	240	100

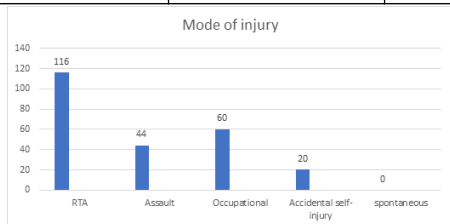


Figure 6: Mode of injury in affected population.

7. Lid abrasion accounted for 52.50% in Injury subtypes.

Injury subtypes	Number of patients	Percentage
Corneal abrasion	12	5
Corneal perforation	6	2.50
Lid abrasion	96	40
Lid laceration	126	52.50
Total	240	100

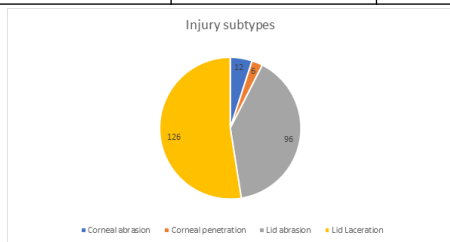


Figure 7: Injury subtypes.

8. 90.83% of the patients had one eye involved

Side of injury	Number of patients	Percentage
Unilateral	218	90.83
Bilateral	22	9.17
Total	240	100

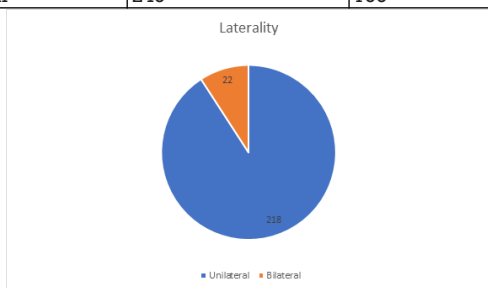


Figure 8: Laterality.

DISCUSSION:

Patil SB et al, and Ababneh LT et al, in their studies concluded that most common cause of ocular trauma was found to be due to road traffic accidents, and in our studies we concluded as well that road traffic accidents is the most common cause of ocular trauma accounting for 61.67% of the ocular injuries presenting to our centre. Khan AK et al, and Patil SB et al, in their studies concluded that the age group where maximum ocular injuries occur to be between range of 21-30 years respectively and our studies also showed similar range from 21-30 years. Patil SB et al, and Vats S et al, in their studies

concluded that ocular injuries occur mostly among male population and our studies concurs with this observation with our studies showing male population amounting for 74.10 % of the total people presenting with ocular injuries. Nirmalan PK et al, concluded that much of the ocular trauma was unilateral and our studies also had the same conclusion with unilateral accounting for 90.80%. Ababneh LT et al, and Patil SB et al, in their studies inferred that male population have maximum ocular injuries due to the nature of jobs and risk-taking behaviours respectively. Our studies with the result of road traffic accidents and male population being the most affected in ocular injuries have similar inference. Wagh V, et al, in their studies mentioned that closed globe injury was the commonest among the types of injury with 80% of the total and its subtypes lid laceration making up for 71.67% in ocular injuries and our studies also presented a similar conclusion with closed globe injury making up for 96.67 % and lid laceration making up of 52.50%. Blair K, et al, in their study also emphasized on early and urgent management for globe rupture type ocular injury so as to prevent visual loss. Gupta A, et al, in their studies inferred that early presentation, good presenting visual acuity and the location also prognosticate visual outcome. This is important due to the fact that, the ultimate goal is to preserve the vision.

Most of the ocular injuries presented between 8:00 pm to 2:00 am which accounted for 70% of total patients presenting to emergency or eye outpatient department. This factor can be attributed to the fact that RTA's occur in higher frequency at night due to increase recklessness in driving, driving under influence, poor street lighting and decreased monitoring.

CONCLUSION:

Ocular injuries were seen maximally in age group between 21-30 years, male gender being affected most and RTAs as the most common cause. Environmental and risk-taking behaviours of male gender can be attributed to this cause. The most common time of presentation of the patients, was observed to be during the night between 8:01 pm to 2:00 am due to higher frequency of RTA's due to increase recklessness in driving, driving under influence, poor street lighting and decreased monitoring. Better implementation of road traffic rules and safety measurements at work, also educating the mass population regarding ocular injuries will go a long way to curb ocular injuries.

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