

The pattern of ocular emergencies in Lumbini Eye Institute and Research Center



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ABSTRACT

Background: An ocular emergency is any condition in which early action is necessary to prevent severe and permanent damage to the eye. **Aims and Objective:** To describe the pattern of common ocular diseases presenting in emergency department. **Materials and Methods:** This was descriptive retrospective study conducted for the period of six months from 1st March 2019 to 31 August 2019, in emergency department of Lumbini Eye Institute and Research Center, Bhairahawa, Nepal. The data were documented from medical records in terms of age, sex, presenting visual acuity in affected eye, address and diagnosis of the disease. **Results:** There were total 604 patients who visited in six months period, 439 male (72.68%), 165 female (27.32%) with male to female ratio of 2.66. The patients from Lumbini Zone were 490 (81.1%), out of Lumbini Zone, Nepal were 40 (6.6%) and 74 (12.3%) were from India. There were 182 (30.1%) patients below 16 years of age. The largest number of patients were between 21-40 years comprising 41.9%. The common ocular emergencies were foreign body (13.1%), blunt trauma (11.9%), conjunctivitis (10.4%), open globe injury (10.3%) and corneal epithelial defect (9.3%). **Conclusion:** Most of the patients in emergency were male. The middle age patients were common followed by pediatric age group. Trauma and conjunctivitis were the most common ocular emergencies.

Key words: Ocular emergency; Trauma; Conjunctivitis

INTRODUCTION

Lumbini Eye Institute and Research Center is one of the tertiary eye hospitals of Nepal with the care for emergency eye diseases and general anesthesia facility. The patients with eye diseases from Western part of Nepal and Uttar Pradesh of India visit this hospital as referral center.

An ocular emergency can be defined as any condition in which early action is necessary to prevent severe to permanent damage to the eye.¹ Ocular emergency can be as minor as foreign body for e.g. eyelash inside the eye to the vision threatening conditions e.g. chemical injuries. Ocular trauma is recognised as the leading cause of unilateral blindness.² Ocular emergency needs

immediate examination and prompt treatment as some of the conditions may cause permanent vision loss and the visual outcome may depend on timely management.³ Ocular trauma and ocular infections are common ocular emergencies.⁴ A total number of 127 children visited with Penetrating eye injuries who needed surgical intervention in a year in the hospital where this study was conducted.⁵

Chemical injury needs immediate irrigation of eyes even before visual acuity assessment. Normal saline or Ringer lactate solution can be used, sometimes clean water has to be used if no other option available to wash the chemicals from eyes before it damages eye.³

Open globe injury needs surgical intervention as soon as possible to prevent endophthalmitis. In case of children,

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the patient should be given nothing by mouth taking in account for need of general anesthesia for surgery. Eye shield should be applied to prevent further damage and topical medication is to be avoided.

The aim of this study was to describe the common ocular diseases presented in emergency department.

MATERIALS AND METHODS

This study was descriptive retrospective conducted for the period of six months from 1st March 2019 to 31st August 2019. The approval was taken from Institutional Review Committee of the hospital.

All of the patients who visited emergency department of Lumbini Eye Institute and Research Center during study period were included in this study. The data were collected from medical records in terms of age, sex, address, visual acuity at presentation in affected eye, and diagnosis of the disease. The data were entered in SPSS version 20 and variables were analyzed as frequency and percentages.

RESULTS

In this study, there were total 604 patients who visited emergency department during six months period. Male patients were 439 (72.68%) and female were 165 (27.32%) with male to female ratio of 2.66. The patients from Lumbini zone were 490 (81.1%), out of Lumbini, Nepal were 40 (6.6%) and 74 (12.3%) were from India. There were 182 (30.1%) patients below 16 years of old. The largest number of patients were between 21-40 years of age comprising 41.9%. The second most common age group was below 10 years (21.2%) (Table 1). Approval was obtained from the Institutional Ethics Committee prior to the commencement of the study.

The common ocular emergencies were foreign body (13.1%), blunt trauma (11.9%), conjunctivitis (10.4%), open globe injury (10.3%) and corneal epithelial defect (9.3%) (Table 2).

Ocular infection was also common cause for emergency visits. The ocular infections were conjunctivitis, corneal ulcer, preseptal cellulitis, orbital cellulitis and endophthalmitis accounting 15% of the total emergency cases (Table 2).

The trauma related corneal foreign body (hanging nail penetrating cornea) while hammering nail on the wall (Figure 1) and full thickness corneal laceration with traumatic cataract has been shown in the Figure 2.

Table 1. Age distribution of ocular emergency patients

S. N.	Age	Frequency	Percent
1	0-10	128	21.2
2	11-16	54	8.9
3	17-20	43	7.1
4	21-30	145	24
5	31-40	108	17.9
6	41-50	57	9.4
7	51-60	36	6
8	61-70	18	3
9	71-80	13	2.2
10	81-90	2	0.3
Total		604	100

Table 2. Types of ocular emergencies and frequency

S.N.	Diagnosis	Frequency	Percentage
1	Extraocular Foreign body	79	13.1
2	Blunt trauma	72	11.9
3	Conjunctivitis	63	10.4
4	Open globe injury	62	10.3
5	Epithelial defect	56	9.3
6	Toxic conjunctivitis	36	6
7	Subconjunctival hemeorrhage	31	5.1
8	Chemical injury	29	4.8
9	Lid laceration	23	3.8
10	Uveitis	20	3.3
11	Conjunctival laceration	18	3
12	Corneal ulcer	16	2.6
13	Allergic Conjunctivitis	15	2.5
14	Thermal injury	12	2
15	Preseptal/Orbital Cellulitis	9	1.5
16	Dry eye	4	0.7
17	Endophthalmitis	3	0.5
18	Others	56	9.3
Total		604	100

Table 3. Unaided visual acuity on affected eye at presentation

S.N.	Visual acuity	Frequency	Percentage
1	6/6-6/18	361	59.8
2	6/24-6/60	60	9.9
3	<6/60	126	20.9
4	CSM	44	7.3
5	Not available	13	2.2
Total		604	100

CSM=Central, Steady, Maintained

The unaided visual acuity at presentation on the affected eyes were 6/6-6/18 in 361 (59.8%), 6/24-6/60 in 60 (9.9%) and less than 6/60 in 126 (20.9%). In small children visual acuity couldn't be assessed but CSM was present in 44 (7.3%) and was not documented in 13 (2.2%) (Table 3).

DISCUSSION

In this study, male were predominant with 72.68% which was similar to study by Pandey PR⁴, Jan S et al⁶, Dulal S



Figure 1: Corneal foreign body (nail, penetrating cornea)

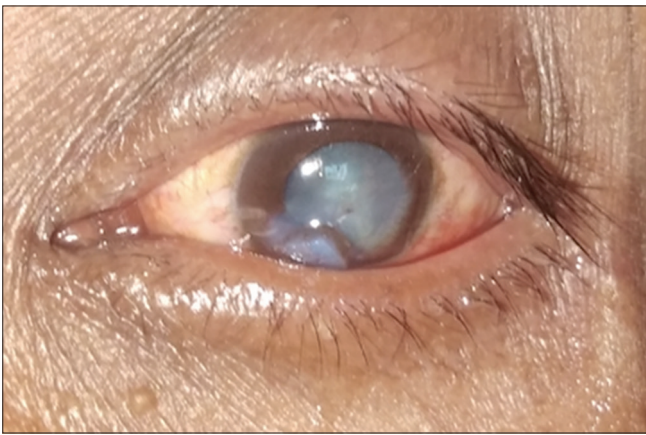


Figure 2: Full thickness corneal laceration with traumatic cataract

et al⁷, and Kinderan YV et al⁸ who found 73.6%, 66.67%, 62% and 69.3% respectively. Trauma was common in male which might be due to aggressive nature.

In this study, 30.1% patients were below 16 years of old which was similar to the study by Dulal S et al⁷ who found ocular trauma in 54.7% below 16 years. The maximum number of patients were between 21- 40 years of age comprising 41.9%. The second most common age group was below 10 years (21.2%) and 21% were above 40 years. It was similar to the study by Jan S et al⁶ who had most (83.78%) of traumatic ocular emergencies below 40 years and 60.75% below 20 years of age and only 16.21% cases were 40 years and above. The reason behind the ocular emergency being common in below 40 years could be due to active age in outdoor work and therefore prone for trauma and infection.

Foreign body was most common presentation as in this study comprising 13.1% which was the commonest presentation (40%) among trauma cases in the study by Pandey PR et al⁴. Injury is the cause for most the

ocular emergency visit, open globe injury 10.3%, blunt trauma 11.9%, chemical injury 4.8% and thermal injury 2%; 58.2% in total were due to injury. It was similar as in the study by Pandey et al⁴, where 75.7% were due to trauma.

Ocular infection was also common cause for emergency visit. The presentations were conjunctivitis, corneal ulcer, preseptal cellulitis, orbital cellulitis and endophthalmitis accounting 15% of the cases. Ocular infection was 24.3% in the study by Pandey et al⁴.

The visual acuity at presentation on the affected eyes were less than 6/60 in 20.9% and not available in 2.2%. The poor vision with ocular trauma needed admission and surgical intervention. One of the study by Kang Eugene Yu- Chuan et al⁹ showed the presenting visual acuity can be one of the indicator of ocular emergency and need for intervention, admission and time for managing ocular emergency.

CONCLUSION

Most of the patients in emergency were male. The middle age patients were common followed by pediatric age group. Trauma and conjunctivitis were the most common ocular emergencies who presented in hospital. Early surgical intervention is necessary to prevent severe damage in case of open globe injury.

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Author's contribution:


KB- Concept and design of the study, reviewed literature, preparation and revision of manuscript; **BB-** Collection of data and revision of manuscript; **AH-** Reviewed literature and revision of manuscript; **KJ-** Design and revision of manuscript.


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