



## CLINICAL PROFILE OF RED EYE IN A MEDICAL COLLEGE AND TERTIARY HOSPITAL IN ANDHRA PRADESH

Viswa S Reddy T<sup>1</sup>, Sreeramulu A<sup>2\*</sup>

<sup>1</sup>Assistant Professor, Department of Ophthalmology, Kamineni Institute Of Medical Sciences and Research Foundation, Amalapuram, Andhra Pradesh - 533201, India.

<sup>2</sup>Professor, Department of Ophthalmology, Kamineni Institute Of Medical Sciences and Research Foundation, Amalapuram, Andhra Pradesh - 533201, India.

### ABSTRACT

To analyse the various causes of red eye among patients attending a tertiary hospital in Andhra Pradesh. A descriptive cross sectional study was carried out in patients who presented to the outpatient department with complaints of redness of eyes of acute onset. Out of the 10,860 patients who had registered, the clinical records of 1620 patients with complaints of red eye were retrieved and analysed using MS office Excel sheet. Out of the 1620 patients, 1080 were adults and 540 were of the paediatric age group (<12years). There were 720 males and 360 females in the adult population. The most common cause of red eye in adults and paediatric population was found to be conjunctivitis, 32% and 62% respectively. The next common cause of red eye in the adults was to be foreign bodies (21%) followed by trauma (19%). However in the paediatric population, inflammatory conditions of the lids like hordeolum internum and hordeolum externum (18%) and trauma (14%) were found to be the common causes. Conjunctivitis accounts for the most common cause of red eye. While infective conjunctivitis was more common in adults (70%), allergic conjunctivitis was found to be more common among children (59%). Early diagnosis and appropriate treatment of these conditions, can prevent patients from developing vision threatening complications.

**Key words:** Red Eye, Blindness, Conjunctivitis, Allergic, Trauma.

### INTRODUCTION

A patient with red eye is one of the most common presenting complaint to the ophthalmic outpatient department [1-2]. It can be a manifestation of a wide spectrum of ocular disorders ranging from benign conditions like conjunctivitis to potentially sight threatening conditions like orbital cellulitis or cavernous sinus thrombosis [3-4]. It can be unilateral or bilateral. Depending on the cause, red eye can be a conjunctival congestion, circumboreal congestion, sub conjunctival haemorrhage, dry eye etc. Causes of red eye include conjunctivitis, both infectious (viral/ bacterial) and non-infectious (allergic), trauma, foreign bodies, corneal ulcers, iridocyclitis, meibomianitis, acute glaucomas, inflamed pterygium, episcleritis, scleritis, acute dacryocystitis, preseptal and orbital cellulitis [5].

Proper history, complete ocular examination, correct diagnosis and appropriate treatment will prevent complications [6]. This study was conducted to determine the causes of red eye among the patients attending the outpatient department in a tertiary hospital in Amalapuram, Andhra Pradesh and thus decrease the ocular morbidity due to diseases causing red eye by appropriate treatment and timely intervention.

### MATERIAL AND METHOD:

A facility based descriptive cross sectional study was done in the ophthalmology outpatient department. Among the patients with various ocular disorders who attended the OPD, 1620 patients had presented to the OPD with

Corresponding Author :- Dr. A. Sreeramulu Email:- drpebyreddy@yahoo.com

complaints of redness in one or both eyes with duration less than one week. The clinical case records of all the 1620 patients were retrieved and analysed for demographic data, laterality, site and causes of red eye.

**Inclusion Criteria:**

All patients with complaints of acute (less than 7 days duration) redness of eyes (unilateral or bilateral) were included in the study.

**Exclusion Criteria:**

1. Patients with longer duration of red eye were excluded.
  2. Patients who were undergoing treatment for red eye were excluded
- All patients fulfilling the above criteria were included in the study. The data were tabulated in MS office Excel sheet and analysed.

**Results:**

Out of the 1620 patients, 1080 were adults and 540 patients were in the paediatric age group

Amongst the adults, the common causes of red eye were found to be conjunctivitis 33% (357 patients), foreign bodies 21% (227 patients), trauma 19% (205 patients), Hordeolum internum/ hordeolum externum 8% (86 patients), corneal ulcers 5% (54 patients), meibomianitis 4% (43 patients), iridocyclitis 3% (32 patients), acute glaucomas 2% (22 patients) and other causes 5% (54).

In the adults, it was found that infectious conjunctivitis 70% (249 patients) was more common than the allergic conjunctivitis 30% (107 patients).

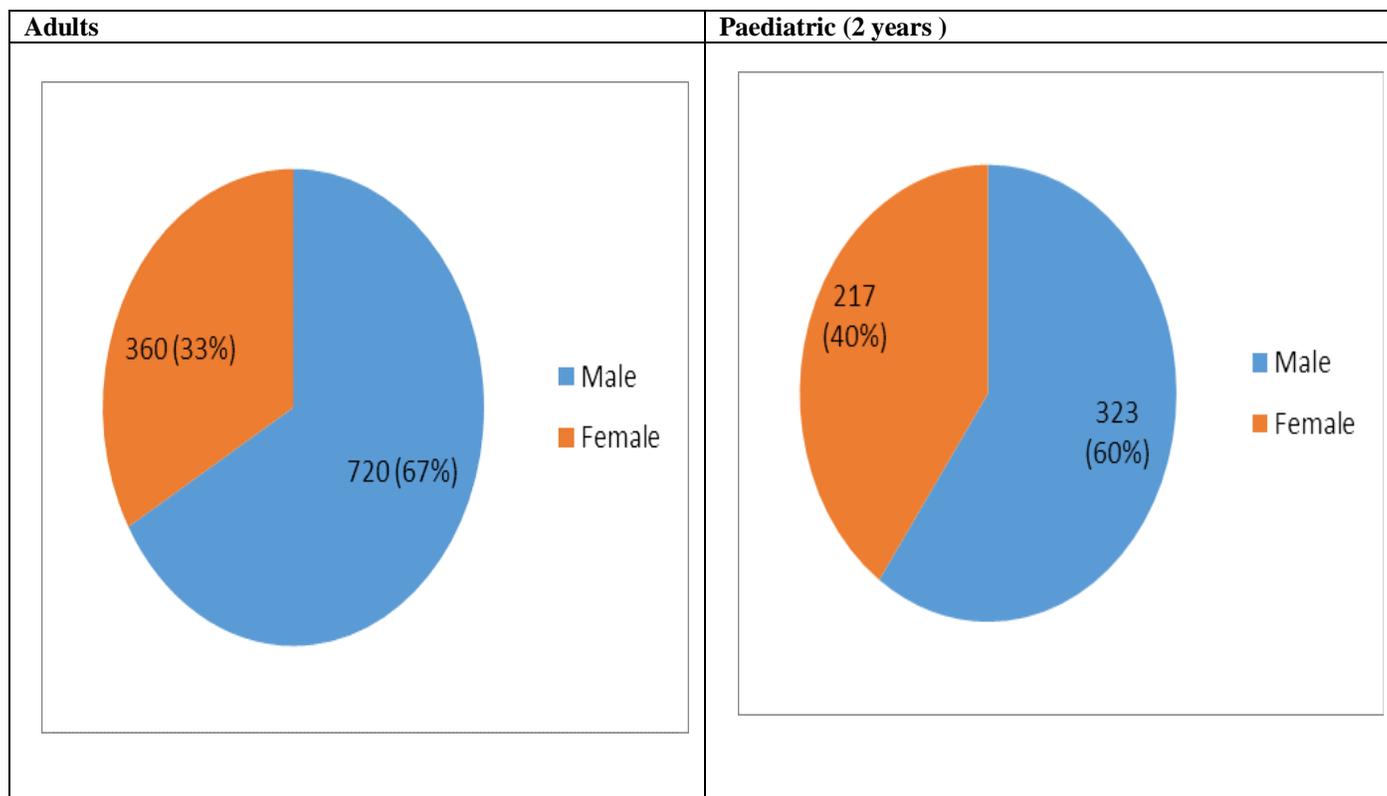
It was also seen that amongst the foreign bodies, iron foreign bodies and caterpillar hair were more common any other type of foreign bodies.

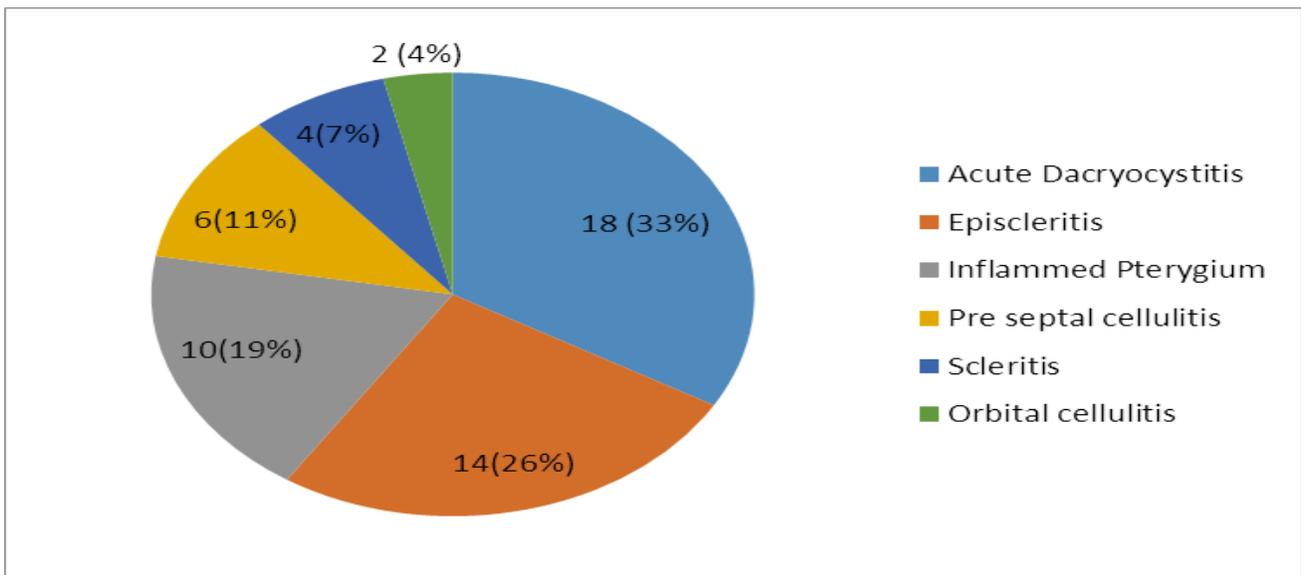
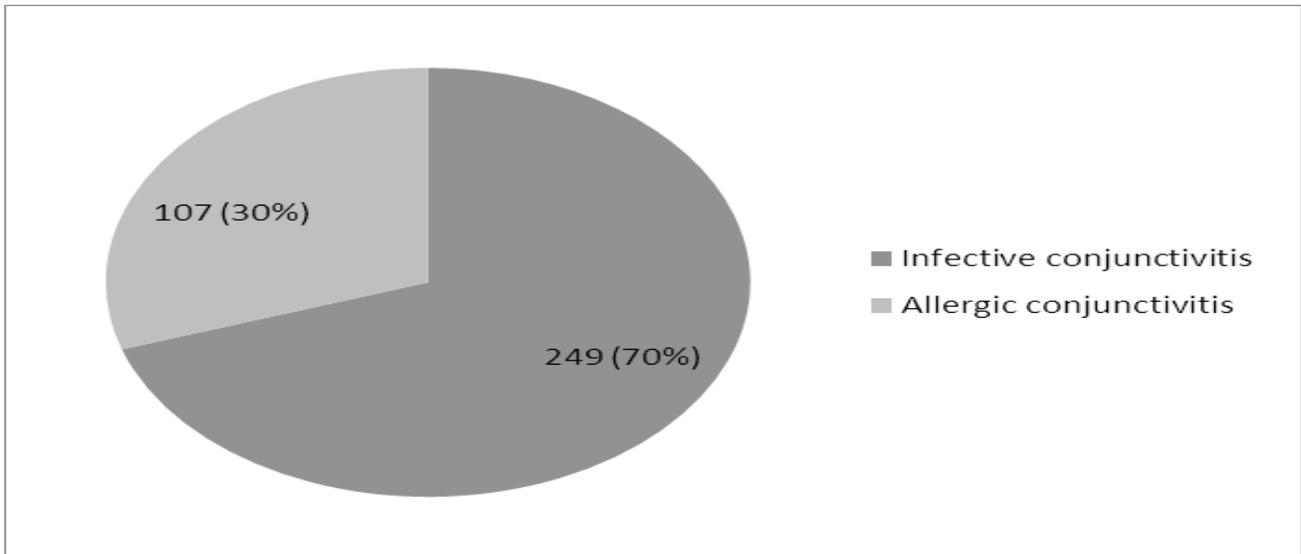
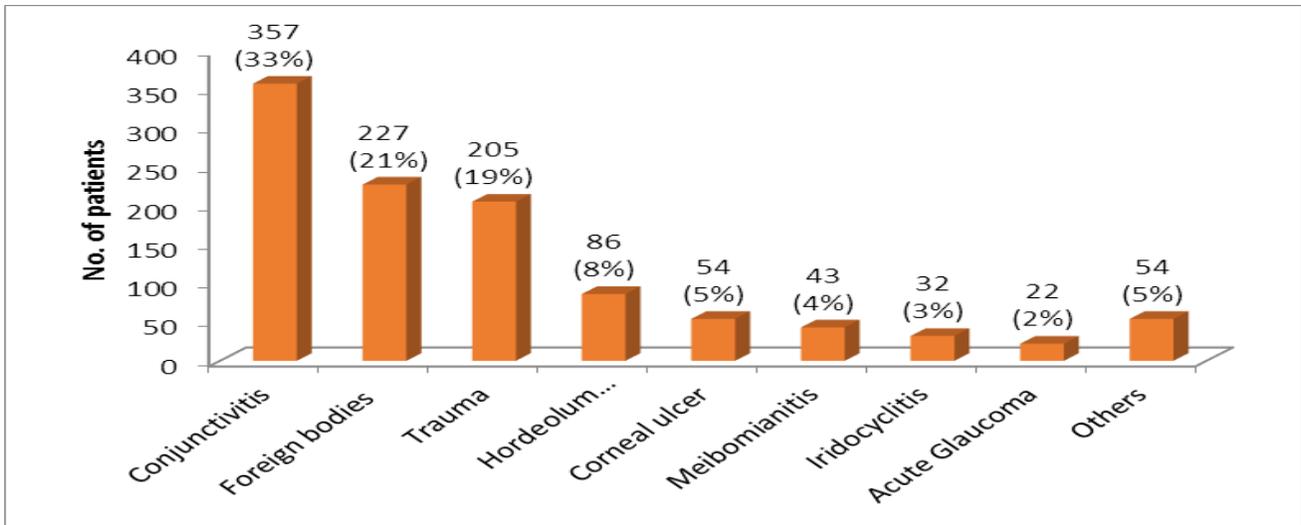
Among the 205 patients who had presented with trauma, blunt trauma accounted for 61% (125 patients) of cases, surgical trauma was the cause in 37% (76 patients) and penetrating trauma accounted for 2% (4 patients). 2% of adult patient who presented with red eye and acute glaucoma, had lens induced glaucomas, acute angle closure glaucoma and Posner Scholssman syndrome.

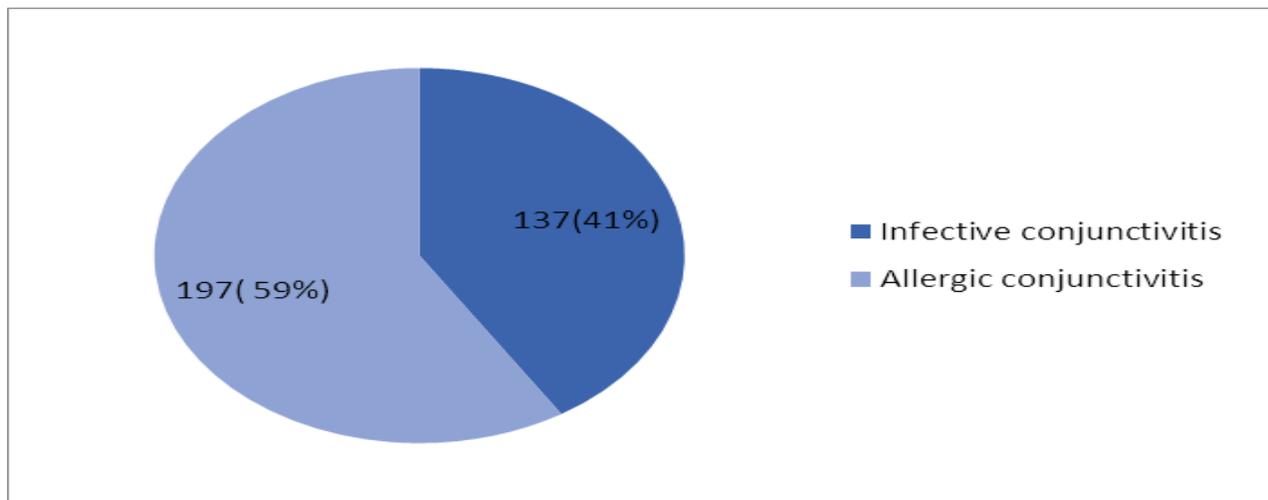
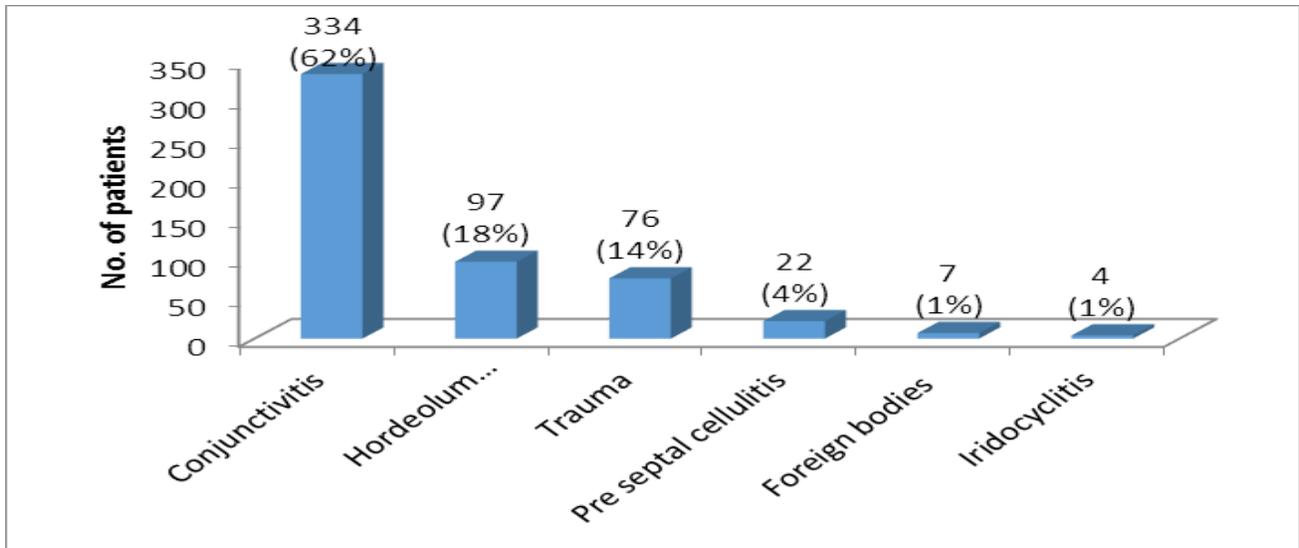
In the adults, other causes of red eye like acute dacryocystitis 33%, episcleritis 14%, inflamed pterygium 19%, pre septal cellulitis 11%, scleritis 7% and orbital cellulitis 4% were also diagnosed and treated

In the paediatric age group, the common causes of red eye were found to be conjunctivitis 62% (334 patients), hordeolum externum / hordeolum internum 18% (97 patients), trauma 14% (76), preseptal cellulitis 4% (22 patients), foreign bodies 1% (7 patients) and iridocyclitis 1% (4 patients)

In our study, it was found that allergic conjunctivitis 59% (197 patients) was more common than the infectious conjunctivitis 41% (137 patients) in the paediatric age group







**Discussion:**

In our study, among the 1080 adult patients, 67% (720 patients) were males and 33% (360 patients) were females. Of the 500 patients under study [7], 325 (65 %) were male and 175 (35%) were female.

In the adults, it was found conjunctivitis 33% is the most common cause of red eye and infectious conjunctivitis 70% (249 patients) was more common than the allergic conjunctivitis 30 % ( 107 patients). In previous study [7], most prevalent cause of red eye was conjunctivitis (26.4%). It was found that ocular allergy (49.1%). was responsible for the majority of causes of red eye in previous studies [8-10].

Ocular foreign bodies (21%) were found to be the second most common cause of red eye in our study which was similar (23.2% ) to previous study [11] .Where as foreign bodies were seen only in 1.7% of patients with red eyes in a study [8].

In this study, ocular trauma is the third most common cause of red eye (19%) In a study [10] ocular

trauma was the most common cause of red eye (41). Our study showed that majority of cases of ocular trauma occurred in males. It was similar to the findings [12] and that of other study [13]. Our study showed that blunt trauma (61%) was more commoner than surgery induced trauma (37%) or penetrating injuries (2%). Our study also revealed that 8% of patients had presented with red eye and hordeolum internum and hordeolum externum . Corneal ulcers (5%) were reported as a cause of red eye in our study period, where as it was seen in 7% of cases in one study [8] . In order to prevent visual loss due to corneal ulcer, prompt treatment should be initiated . In our study meibomianitis leading to tear film dysfunction and red eye was seen in 4% of cases .Dry eye leading to red eye was a common cause in another study [14] . In previous study [15] , the incidence rate of endophthalmitis following trauma presenting as red eye ranges from 0 to 16.5% , where as trauma was reported as a cause of red eye in 1.2% cases in a study [8] .However in our study , there

were no cases of endophthalmitis which were reported during the study period .

Our study also showed that patients with red eye had acute glaucomas (2%) including lens induced glaucoma, primary angle closure and Posner Schlossman syndrome .Orbital cellulitis a potentially vision threatening complication was seen in 2 patients in our study, during the study period. In a previous study [8], 1% of the cases of red eye was due to endophthalmitis. In our study, it was found that allergic conjunctivitis 59% (197 patients) was more common than the infectious conjunctivitis 41% (137 patients) in the paediatric age group. Pre septal cellulitis was seen in 4% of cases. This needs to be differentiated

from orbital cellulitis and appropriate treatment should be initiated.

#### CONCLUSION

In our study, infectious conjunctivitis was the most common cause of red eye, followed by foreign bodies and trauma in adults. In the paediatric age group, allergic conjunctivitis, trauma and hordeolum internum and externum were the common causes of red eye. As red eye is an important symptom in a broad spectrum of ocular disorders, proper history, meticulous examination appropriate investigations and treatment will prevent ocular morbidity.

#### REFERENCE:

1. Ruppert SD. Differential diagnosis of pediatric conjunctivitis (red eye). *Nurse Pract.* 1996 Jul;21(7):12, 15-8, 24 *Passim Review.*
2. Tuladhar S, Dhakal S. A pattern of ocular morbidity in patients attending an ophthalmic clinic in a rural part of Western Nepal. *J Nobel Med Coll.* 2013;2:27-30.
3. Welch JF, Dickie AK. Red Alert: Diagnosis and management of the acute red eye. *J R Nav Med Ser* 2014;100:42-6.
4. Sakaida H, Kobayashi M, Ito A, Takeuchi K. Cavernous sinus thrombosis: Linking a swollen red eye and headache. *Lancet* 2014;384:928.
5. Krachmer JH. The red eye. In: Palay DA, Krachmer JH, editors. *Primary Care Ophthalmology.* Ch. 3. Philadelphia: Elsevier Mosby; 2005. p. 39-65.
6. Welch JF, Dickie AK. Red Alert: diagnosis and management of the acute red eye. *J R Nav Med Serv.* 2014;100(1):42-6
7. Dr. Harvinder Nagpal. "Clinical profile of patients presenting with red eye at a tertiary care hospital in India: A retrospective study" *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, vol. 17, no. 12, 2016, pp 01-02.
8. Monsudi KF, Azonobi IR, Ayanniyi AA. Pattern of red eye in a Tertiary Eye Clinic in Nigeria. *Afr J Med Health Sci* 2015;14:101-4.
9. Lawan A. Causes of red eye in Aminu Kano Teaching Hospital, Kano-Nigeria. *Niger J Med* 2009;18:184-5.
10. Ashaye AO, Asuzu MC. Ocular findings seen among the staff of an institution in Lagos, Nigeria. *West Afr J Med* 2005;24:96-9.
11. Asadollah et al Common causes of red eye presenting in northern Iran , *Romanian Journal of Ophthalmology* 2016;60(2): 71-78
12. Chiapella AP, Rosenthal AR. One year in an eye casualty clinic. *Br J Ophthalmol* 1985;69:865-70.
13. Khattri SK, Lewis AE, Schein OD, Thapa MD, Pradhan EK, Katz J. The epidemiology of ocular trauma in rural Nepal. *Br J Ophthalmol* 2004;88:456-60.
14. Tarff A, Behrens A. Ocular Emergencies: Red Eye. *Med Clin North Am.* 2017 May;101(3):615-639.
15. Ahmed Y, Schimel AM, Pathengay A, Colyer MH, Flynn HW Jr. Endophthalmitis following open-globe injuries. *Eye (Lond)* 2012;26: 212-7.