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A STUDY OF PROFILE OF PATIENTS WITH OCULAR TRAUMA IN TERTIARY CARE CENTER

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ABSTRACT: INTRODUCTION: About 1.6million people are blind from ocular trauma, 2.3million bilaterally visually impaired. 19million suffered from unilateral visual loss worldwide. It is believed that majority of eye injuries are preventable with existing, relatively inexpensive protective devices and health education. **MATERIALS AND METHODS:** It was a prospective hospital based study, 103 patients with ocular trauma injuries presented to ophthalmology OPD or emergency department, in a tertiary care hospital and assessed by an ophthalmologist were included in the study. Detailed ophthalmic work up of all the patients including slit lamp examination, +90D examination and indirect ophthalmoscopy was carried out. Ultrasonography was performed whenever unclear media prevented fundus evaluation. **RESULTS:** In our study, majority of the subjects 52(50.4%) had ocular trauma due to road traffic accidents followed by assault injuries 17(16.5%). Majority of the subjects clinically presented with symptoms like sub-conjunctival hemorrhage 29(28.1%), followed by laceration 26(25.2%) and abrasion 21(20.3%). 83(80.5%) cases had closed globe injuries whereas 20(19.5%) had open globe injuries. **CONCLUSION:** Ocular injuries can be reduced by the use of eye protection devices and the implementation of appropriate preventive strategies to address each risk factor. In addition, there should be a continual assessment of safety and health issues at home and workplace.

KEYWORDS: Eye injury, Ocular trauma, Open globe and Closed globe, Visual deficit.

INTRODUCTION: Globally more than half a million blinding injuries occur every year. About 1.6 million people are blind from ocular trauma, 2.3 million bilaterally visually impaired. 19 million with unilateral visual loss worldwide.¹ Ninety percent of ocular injuries can be prevented using appropriate protective wear. The impact of trauma on a human eye may range from occurrence of minute corneal abrasions/innocuous sub-conjunctival hemorrhage to a badly lacerated globe.² The eye is the third most common organ affected by injuries after the hands and feet and most of the information reach the humans through vision.

Consequently, the socioeconomic impact of ocular trauma can hardly be overestimated as those affected often have to face loss of career opportunities, major lifestyle changes and occasionally permanent physical disfigurement.³ In addition to physical and psychological cost of eye injuries to the individual, there is a direct and indirect financial cost to the society and environment.⁴ because even minor eye injuries can cause considerable morbidity and time loss from work.⁵

It is believed that majority of eye injuries are preventable with existing, relatively inexpensive protective devices and health education. However the lack of health infrastructure, poor health seeking behavior of patients and low level of patient care all compound to create a worse prognosis for those with ocular trauma in developing countries. With regard to the public health problem presented by ocular trauma, it becomes necessary to gather information regarding the mode of

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presentation, nature of injuring agent, to observe and detect the extent of involvement of different structures and complications ensuing from them by available clinical and investigational means. This would enable us in the management of ocular trauma so that timely intervention can prevent loss of vision and preserve the eyes.⁶

MATERIAL AND METHODS:

Design: It was a prospective hospital based study done in a tertiary care hospital.

Duration: October 2011 to February 2013.

Study Population: 103 patients with ocular trauma injuries presented to ophthalmology OPD or emergency department and assessed by an ophthalmologist.

Inclusion criteria: Inclusion criteria were open globe injuries and closed globe injuries.

Exclusion criteria: Exclusion criteria were extra ocular foreign body, corneal abrasions, adnexal injuries, orbital injuries and non-mechanical injuries.

Ethical clearance: Approved from the ethical committee.

PROCEDURE: All patients were examined according to standardized protocol and the data was recorded in proforma developed for the purpose. Demographic data and details of modes of injury were obtained. The patient's initial complaints, as well as the interval between the time of injury and time of presentation were also recorded. The examination findings of the injured eye, the visual acuity, diagnostic tests, investigations and final diagnosis were obtained and recorded.

Detailed ophthalmic work up of all the patients including slit lamp examination, +90D examination and indirect ophthalmoscopy was carried out. Ultrasonography was performed whenever unclear media prevented fundus evaluation.

RESULTS: A total of 103 patients were seen during the study period who were had some form of ocular trauma. Of the study cohort, 63(61.1%) were males while 40 (38.9%) were females. Mean age of the study group was 28.3 ± 17.8 years (range 1 month to 80 years). The people in the children age group (0-10years) were most affected (23.3%), followed by the age group (21-30years). Distribution of the ocular trauma with respect to age and sex of the study subjects is given in table no. 1.

In our study, majority of the subjects 52(50.4%) had ocular trauma due to road traffic accidents followed by assault injuries 17(16.5%). Distribution of the subjects according to the cause of ocular trauma is given in table no. 2.

In our study, 83(80.5%) cases had closed globe injuries whereas 20(19.5%) had open globe injuries. Distribution of the study subjects according to the type of ocular trauma is given in table no. 3.

In our study, majority of the subjects clinically presented with symptoms like sub-conjunctival hemorrhage 29(28.1%), followed by laceration 26(25.2%) and abrasion 21(20.3%). Distribution of the study subjects according to the presenting symptoms is given in table no. 4.

In our study, majority of the subjects 40(38.8%) had no visual deficit, 26(25.2%) had uniocular visual deficit and 15(14.5%) had binocular visual deficit. Distribution of the study subjects according to the visual deficit is given in table no. 5.

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DISCUSSION: Out of total 103 study subjects, 63(61.1%) were males while 40 (38.9%) were females. The people in the children age group (0-10years) were most affected (23.3%), followed by the age group (21-30 years). Mukherjee AK, Saini JS, Dabral SM (1984) carried out a similar study of 82 patients varying in age group from 5yrs to 62years which were hospitalized with penetrating ocular injuries. Majority of these were males (60 cases, 73.17%). 37 patients (44.91%) were less than 30 years of age.⁷

In our study, majority of the subjects 52(50.4%) had ocular trauma due to road traffic accidents followed by assault injuries 17(16.5%). Similar findings were observed in a study done by R. N. Kushwaha, Rashmi Rastogi et al. in 2013.⁸

In the current study ocular trauma was divided into open and closed globe injury. Various epidemiological studies have shown a higher incidence of closed globe injuries. In a Korean study by Oum et al the prevalence of closed ocular injury was about six times higher than that of open ocular injury.⁹ Karaman et al in their retrospective analyses of 383 patients found 67.3% of ocular injuries were closed globe and 32.7% were open globe injuries.¹⁰ In a study in Malaysia closed globe injuries were 61.1% and open-globe injuries were 34.8%¹¹ In our study, 83(80.5%) cases had closed globe injuries whereas 20(19.5%) had open globe injuries.

In our study, majority of the subjects clinically presented with symptoms like sub-conjunctival haemorrhage 29(28.1%), followed by laceration 26(25.2%) and abrasion 21(20.3%) which is slightly higher than the study done by Rajappa and Khardenavis et al. in 2014.

In our study, majority of the subjects 40(38.8%) had no visual deficit, 26(25.2%) had uniocular visual deficit and 15(14.5%) had binocular visual deficit. Whereas observed that most of the patients (60%) had poor visual acuity at the time of presentation with appropriate management the above figure drop down to 20% at the end of three months, which indicates if well-treated, these cases of injury can have good recovery and also the importance of establishing the better access to medical facilities.¹²

CONCLUSION: Ocular injuries can be reduced by the use of eye protection devices and the implementation of appropriate preventive strategies to address each risk factor. In addition, there should be a continual assessment of safety and health issues at home and workplace. A long-term database of all ocular injuries in the country is recommended, to aid research on a larger scale and the development of new preventive strategies for ocular injuries.

REFERENCES:

1. Negrel AD, Thylefors B. The global impact of eye injuries. *Ophthalmic Epidemiol.* 1998; 5: 143–69.
2. D.V. Singh, Yog Raj Sharma, R.V. Azad, Dinesh Talwar, Rajpal. Profile of Ocular Trauma at Tertiary Eye Centre. Vol. 7 No. 1, January-March 2005; 1-6.
3. Nordber E. Ocular injuries as a public health problem in sub-saharan Africa: Epidemiology and prospect for control. *East Afr Med. J* 2000; 77:1–43.
4. Vernon SA, Yorston DB. Incidence of Ocular Injuries from road accidents after introduction of seat belt legislation. *J R Soc Med.* 1984; 77:198-200.
5. Johnston PB, Armstrong MF: Eye injuries in Northern Ireland two years after seat belt. *Br J Ophthalmol.* 1986; 70:460–2.

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6. Suresha Anepla Rajappa, Supriya Khardenavis, Aditi Samirbhai Parikh. "Clinical Study of Mechanical Ocular Injuries and their Visual Outcome". Journal of Evolution of Medical and Dental Sciences 2014; Vol. 3, Issue 05, February 03; Page: 1164-1173, DOI: 10.14260/jemds/2014/1962.
7. Mukherjee AK, Saini JS, Dabral SM. A profile of penetrating eye injuries. Indian J Ophthalmol 1984; 32:269-71.
8. Kushwaha R. N, Rastogi R, Gupta R. C., Gupta P, Kumar S. "Profile of ocular trauma in tertiary care centre". Journal of Evolution of Medical and Dental Sciences 2013; Vol2, Issue 27, July 8; Page: 4903-4914.
9. Oum BS, Lee JS, Han YS. Clinical Features of Ocular Trauma in Emergency Department Korean J Ophthalmol (18);2004:70-78,
10. Karaman K, Gveroviae-Antunica A, Rogosiae V, et al. Epidemiology of adult eye injuries in Split Dalmatian country. Croat Med J. 2004; 45(3):304-9.
11. Rajappa S.A., Khardenavis S, Parikh A.S. "Clinical Study of Mechanical Ocular Injuries and their Visual Outcome". Journal of Evolution of Medical and Dental Sciences 2014; Vol. 3, Issue 05, February 03; Page: 1164-1173, DOI: 10.14260/jemds/2014/1962.
12. Prakash D.N, Sathish K, kumar A, patil A. Study of demographic and clinical profile of ocular trauma. Journal of Evolution of Medical and Dental Sciences 2013; Vol2, Issue 11, March 18; Page: 1741-1746.

Age group	Males n (%)	Females n (%)	Total n (%)
0-10	11(10.6%)	13(12.6%)	24(23.3%)
11-20	13(12.6%)	08(07.7%)	21(20.3%)
21-30	17(16.5%)	06(05.8%)	23(22.3%)
31-40	06(05.8%)	02(01.9%)	08(07.7%)
41-50	07(06.7%)	05(04.8%)	12(11.6%)
51-60	05(04.8%)	04(03.8%)	09(08.7%)
61-70	03(02.9%)	02(01.9%)	05(04.8%)
71-80	01(00.9%)	00(00%)	01(0.9%)
Total	63(61.1%)	40(58.9%)	103(100%)

Table 1: Distribution of ocular trauma with respect to age and sex

Cause	Number	Percentage
RTA	52	50.4
Fall injury	03	02.9
Blunt trauma	08	07.7
Penetrating injury	07	06.7
fireworks	02	01.9
Assault	17	16.5
Chemical burn	06	05.8
Foreign body	08	07.7
Total	103	100

Table 2: Distribution of the subjects according to the cause of ocular trauma

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Type	Number	Percentage
Open globe	20	19.5
Closed globe	83	80.5
Total	103	100

Table 3: Distribution of type of ocular injury

Clinical presentation	Number	Percentage
Abrasion	21	20.3
Laceration	26	25.2
Perforation	02	1.9
Ecchymosis	13	12.6
Chemosis	04	3.8
Subconjunctival hemorrhage	29	28.1
Ulcer	02	1.9
Orbital bone fracture	05	4.8
Foreign body cornea	01	0.9
Total	103	100

Table 4: Spectrum of clinical presentation in ocular trauma cases

Visual deficit	Number	Percentage
No deficit	40	38.8
Unilateral deficit	26	25.2
Biocular deficit	15	14.5
Inaccessible	22	21.3
Total	103	100

Table 5: Subjective visual deficit at the time of presentation

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