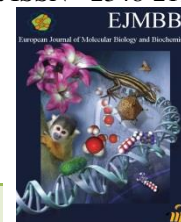




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TO STUDY OF CLINICAL PROFILE AND VISUAL OUTCOME IN OCULAR TRAUMA IN INDIANS

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ABSTRACT

This study is undertaken to determine site and severity ocular trauma, contributing factors and visual outcome in ocular trauma. This prospective study conducted in Department of Ophthalmology, SLIMS, Puducherry. In it 100 subjects (112 eyes) were enrolled in the study, 6 of these subjects had bilateral ocular trauma. A thorough ocular examination was conducted in all patients. This included recording of initial visual acuity, intraocular pressure for non-perforated eyes, biomicroscopy of anterior segment and ophthalmoscopy description of nature and extent of ocular injury. The visual outcome was taken to be the best corrected vision at 3 months post trauma. Total 50 patients (56 eyes) were enrolled in the study. 6 of these patients had bilateral ocular trauma. During the study period, there were 100 patients with ocular injuries admitted in the eye ward. 76(76%) patients were males and 24(24%) were females. Male: female ratio was 3.16:1. Their ages were in the range of 4yrs to 60yrs and the mean age was 29yrs. In our study 22(21.42%) had very poor vision (<3/60) at the time of presentation. With treatment the number decreased to 4(3.57%). 54(48.21%) patient have VA more than 6/18 at the time of presentation which become 78 patient with VA more than 6/18 (69.64%). 5 cases having No light perception (NLP) which did not improve.

INTRODUCTION

Ocular trauma can be defined as any injury to the eyeball, adnexa, orbital and/or periorbital tissues. It can be classified into closed globe injuries (contusions and lamellar lacerations), open globe injuries (globe rupture, penetrating injury, intraocular foreign bodies and perforations) and adnexal injuries. (1) Ocular trauma was once described as “neglected disorder”, but now it is known as a major cause of visual morbidity leading to visual loss or impairment and diminished quality of life. There are approximately 1.6 million people who get blind and 2.3 million people who get bilateral visual impairment due to eye injuries.

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Globally there are 19 million people who suffer unilateral visual loss due to ocular injuries, thus ocular trauma is the commonest (2-3) cause of unilateral blindness at present (2-3).

According to the WHO's Blindness Data Bank, it is estimated that globally about 55 million eye injuries occur each year which restrict activity for more than one day. 750,000 cases due to eye injury require hospitalization each year, out of which approximately 200,000 are due to open-globe injuries.(3). This study is undertaken to determine site and severity ocular trauma, contributing factors and visual outcome in ocular trauma.

MATERIALS AND METHOD:

The prospective study was conducted in Department of Ophthalmology, SLIMS, Puducherry. Patients with ocular injuries who were admitted to the Department of Ophthalmology and Emergency ward of SLIMS. And patient having intra-ocular surgeries in the recent past and having pre-existing ocular pathologies causing severe



visual impairment are excluded. At the initial visit, identity of each patient was recorded including hospital registration number, name of the patient, address, age, sex, occupation, education of the patient and the parents or guardians (for those still under the care of parents/guardians) and ethnic group. Then a detailed history was taken particular attention being paid to the activity in which patient was engaged at the time of injury, type of the injuring agent, mechanism of injury, pre existing ocular status, time between injury and first presentation to the eye department in, reason for late presentation and medications (if any) given during the period between injury and presentation.

A thorough ocular examination was conducted in all patients. This included recording of initial visual acuity, intraocular pressure for non-perforated eyes, biomicroscopy of anterior segment and ophthalmoscopy

RESULTS:

The pre-test post test evaluation conducted after case based learning and didactic lectures depicted an extremely significant statistical difference with increase in

post test performance (**Table 1**). A very significant post test performance was observed among the students after the CBL sessions in comparison to didactic lectures (**Table 2**). A 5 point Likert scale questionnaire which contained 8 questions which was administered to the students, to know their perception on the usefulness of the CBL revealed 91% of the students found the CBL sessions to be an interesting method of gaining knowledge. 84% of them felt CBL could be a good associated T/L method with didactic lectures. 97% of students opined that CBL enhanced the skill and confidence of themselves. 89% opined CBL increased development of critical thinking. 85% expressed that it helped in learning process. 88% of them felt that they exposed them to an experience of logical application of the knowledge which was gained in cracking cases and they were also motivated by these sessions which would be of great help in the future also. 89% of the students perceived that it will help in learning biochemistry easily and can be incorporated with didactic lectures in regular teaching (**Table 3**).

Table 1: Age and sex distribution

Age (yrs)	No. of Patient	Percentage (%)	Males	Females	M:F
0-10	18	18	10	8	1.25:1
11-20	20	20	16	4	4:1
21-30	20	20	16	4	4:1
31-40	24	24	20	4	5:1
41-50	12	12	10	2	5:1
>50	06	06	4	2	2:1
TOTAL	100	100	76	24	3.16:1

Table 2: Type of ocular injury

Type of injury	Male	Female	No. of eyes	Percentage (%)
Closed globe	72	18	90	80.36
Open globe	14	08	22	19.64
TOTAL	86	26	112	100

Table 3: Distribution of study population by occupation

Activity	No. of patient	Percentage (%)
RTA	42	42
Playing	20	20
Agriculture	08	08
Assault	12	12
Sports	02	02
Domestic work	16	16
TOTAL	100	100

Table 4: Activity at the time of injury

Occupation	No. of patient	Percentage (%)
Student	34	34
Farmer	20	20
Domestic	10	10
Business/Office work	08	08
Labour/Factory worker	28	28
Total	100	100



Table 5: BCVA at presentation and at 3 months

Visual Activity	No. of eyes	Percentage (%)	No. of eyes at 3 months follow-up	Percentage (%)
>6/18	54	48.21	78	69.64
<6/18 to 3/60	24	21.42	20	17.85
<3/60	24	21.42	04	3.57
No light perception (NLP)	10	8.92	10	8.92
TOTAL	112	100	112	100

DISCUSSION & CONCLUSION:

In the present study majority of the patients 41 (82%) fell in the age of 4-40 years the mean age of ocular trauma is 29 years. Male: female ratio is 3.16:1. Similar findings were reported by (4) Kuhn et al in their study of the United States Eye Injury Registry over a seven year period (1982-1989). They found that 61% of cases were between 16-35 yrs and had a mean age of 29 yrs. This was similar to the study done by Singh et al (5) where they found nearly 67% of patients under the age of 25 years. There were only 5 cases (8.33%) in the age group of more than 50 years. The male: female ratio in the present study was 3.16:1 and 6 according to the study of Dhasmana et al (6) it was 1.93:1. This fairly matches with world-wide ratio of 4:1 (7-8). In our study most eyes 90 (80.36%) sustained closed globe trauma whilst 22 (19.64%) eyes were open globe trauma. This agrees with studies in Nepal where the commonest type of trauma 9 was closed globe injury 784 (73.3%) and open globe 112 (5.3 %) (9). In study by Gopinath, et al closed globe injuries were seen in 80 patients (66.6%) while open globe injuries were seen in only 32 patients (26.6%) with a ratio of 2.5:1(10).

In our study students are most commonly affected 34 (34%) followed by laborers/factory workers 28 (28%) and agricultural work 20(20%). This is in keeping with a study in Kenya where children/ students were commonly affected, 63 (55%) (11). Ocular injuries are more common in students as they are more active physically and are 10 careless. In study by Gopinath, et al majority of the injuries were found among the industrial workers (33%) The next commonly encountered injuries were students (25%). Agriculturists and other laborers were seen to have almost equal number of injuries (16.66% and 13.33% respectively). This was similar to the study (12) done by Desai et al.

In our study 24 (21.42%) eyes had very poor vision (<3/60) at the time of presentation. With treatment the number decreased to 4(3.57%). 54(48.21%) eyes have

VA more than 6/18 at the time of presentation which became 78 with VA more than 6/18 (69.64%). 5 eyes having No light perception (NLP) which did not improve. However, according to Singh et al study only 20.2% of the patients had visual acuity better than or equal to 6/12 at 10 follow-up (5). In study Gopinath, et al 30 (25%) had very poor vision at the time of presentation. With treatment the number decreased to 16 (13.33%). However, in the study by Titiyal and Prakash (13) the number of patients with severe visual handicap at follow-up was found to be higher at 30% and according to Judo study (14) it was 21%.

Ocular injury is frequently a preventable cause of visual impairment. Since 100% prevention is the goal in all cases of eye injuries, attention should be directed to potential causes of injury on the playfield, at home, and the workplace. In our study, a large number of cases were alcohol related. Excess alcohol consumption is well known to be associated with serious and sometimes even fatal accidents. The community as a whole should be educated about the possible dangerous and sometimes even fatal adverse effects of excessive alcohol consumption. We recommend strict administrative action to be enforced against those found to be indulging excessively and then attempting to drive or getting into uncalled for fights. Public health education aimed at increasing awareness among parents, guardians, and school teachers regarding the need for supervision of children, and institution of prevention programs, especially for the vulnerable groups, is urgently needed in order to reduce ocular morbidity due to ocular trauma. Since none of the patients were wearing any kind of eye protection we recommend wearing protective eye gear while engaged in potentially dangerous tasks, not only at work but also during recreational activities. Many of the sports-related eye injuries could have been prevented by wearing the recommended protective equipment.

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