



A STUDY ON DEMOGRAPHIC DETERMINANTS AND ASSOCIATION OF FUNGAL AND BACTERIAL INFECTION WITH DIFFERENT MODES OF CORNEAL INJURIES

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ABSTRACT

In present study, 132 patients attending the Department of Ophthalmology, Pt. J. N. M. Medical College & Dr. B. R. Ambedkar Memorial Hospital, Raipur during the period of 1year and 6 months, with corneal trauma by different kinds of vegetative and organic material, from November,2011 to April,2013. The study showed, maximum patients in middle decades with range of 21-50yrs. Most of the patients were males (69.30%) and belong to rural background (71.21%). The majority of patients (59.85%) were farmers or agricultural workers. Two peak Seasons were observed first October to march (62.88%) due to harvesting season and second in April to June (25.77%) due to summer vacation of school going children. The predominant traumatic agent in our study was paddy leaf injury (51.51%) and most of the patients after corneal trauma presented with corneal ulceration (75.76%).

KEYWORDS : Corneal Injuries, Demographic determinants

INTRODUCTION

As per, the World Health Organization (WHO)1972, definition of blindness as a visual acuity of 3/60 or less in better eye or visual field is less than 10 degrees, irrespective of the level of visual acuity, it is estimated that currently there are 45 million individuals worldwide who are bilateral blind and another 135 million people in the world that have severely impaired vision in both eyes^[1]. The importance of corneal disease as a major cause of blindness in the world today remains second only to cataract^[2]. It is estimated that ocular trauma and corneal ulceration result in 1.5 to 2 million new cases of corneal blindness annually^[3]. Ninety per cent of them occur in developing countries; and it has now been recognized as a silent epidemic^[4]. In India, there are approximately 6.8 million people who have corneal blindness, with vision less than 20/200 in at least one eye and of these, about a million have bilateral corneal blindness. It is expected that the number of corneal blind people in India will increase to 10.6 million by 2020^[5]. A recent national survey by the Government of India (1991-2001) estimated that corneal lesions are responsible for 9% of all blindness in our country^[6].

AIMS AND OBJECTIVES

- To study the demographic determinants of corneal trauma by vegetative & organic materials.
- To compare the association of fungal and bacterial infection after corneal trauma by different kinds of vegetative and organic material.

METHOD OF EXAMINATION

The study included 132 walk-in patients seen in the department of ophthalmology in tertiary hospital with history of corneal trauma by vegetative material. Their ocular manifestation, clinical course and prognosis were assessed over a period of November to April. Documentation of all patients included socio-demographic features, duration of symptoms, predisposing factors, slit lamp bio microscopy findings, associated ocular conditions, other systemic diseases, therapy received prior to presentation, visual acuity at the time of presentation, treatment given, response to treatment and the clinical outcome.

TABLE – 1

Demographic characteristics of patients with corneal trauma.

Demographic determinants	Numbers	Percentage
Gender		

Male	92	69.70%
Female	40	30.30%
Age Distribution		
<20 Yrs.	22	16.67%
21- 30 Yrs.	23	17.42%
31-40 Yrs.	39	29.54%
41-50 Yrs.	29	21.98%
>50 Yrs.	19	14.39%
Residence		
Rural	94	71.21%
Urban	38	28.79%
Occupation		
Farmer	61	46.21%
Labors	18	13.64%
Household	19	14.39%
Service	10	7.58%
Students/ Children	24	18.18%
Seasonal variation		
Jan- Mar	25	18.94%
Apr-Jun	34	25.76%
Jul-Sep	15	11.36%
Oct-Dec	58	43.94%

TABLE – 2

Association of fungal and bacterial infection with different kinds of vegetative and organic material corneal trauma.

Traumatic agents	Koh +ve	Gram +ve	Koh+ve + Gram+ve	Sterile	Not done	Total (124)
Paddy leave	44	08	07	09	0	68
Wooden stick/Chip	09	03	02	05	19	38
Insects	0	2	0	2	2	6
Cow tail	0	2	0	4	0	6
Finger nail	0	0	0	1	5	6
Total	53	16	9	23	31	132

RESULT AND DISCUSSION

Of the total 132, patients 92 (69.70%) were males and 40 (30.30%) were females with corneal trauma. Males were more prone to corneal trauma because of their nature of work and outdoor occupation. Thylefors et al.⁷, Males tend to have more eye trauma than females. Gothwal et al.⁸, male (86.8%) were affected. Vijaya S. Rajmane et al⁹, all found the maximum number of cases were in the middle decades of age group

between 21 – 50 yrs. Patel S et al¹⁰, (43.9%). Srinivasan M et al¹¹, (43.4%). R.C. Gupta et al¹², (35.8%), all found that among various type of traumatic agent, paddy leaf was most common. In this study, paddy leaf (51.51%) appear to be most common mode of corneal trauma, However in the study by R Nath et al³². fungal keratitis was demonstrated in 65.2% patients which was higher as compared to our study. It was observed that, fungal keratitis was associated with paddy leaf trauma were 51(38.64%)

CONCLUSION

Fungal ulcers were more common than bacterial ulcers. Fungal ulcers should be suspected in every patient with a corneal lesion occurred by vegetative and organic material and should be ruled out before commencing topical medication. Early diagnosis with prompt identification of the pathogenic organism is mandatory to initiate appropriate therapy for corneal injuries to restores good vision.

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