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Assessment of Prevalence, Predisposing Factors, Etiology and Treatment of Corneal Ulcer Patients

Bhawna Pant[1], Prashant Mathur[2*], Yogesh Joshi[3]

1. M.Pharm (Pharmacy Practice), Department of Pharmacy Practice, School of Pharmaceutical Sciences, Shri Guru Ram Rai University, Patelnagar, Dehradun-248001, Uttarakhand, India.
2. Associate Professor, Department of Pharmacy Practice, School of Pharmaceutical Sciences, Shri Guru Ram Rai University, Patelnagar, Dehradun-248001, Uttarakhand, India.
3. Assistant Professor, Department of Pharmacy Practice, School of Pharmaceutical Sciences, Shri Guru Ram Rai University, Patelnagar, Dehradun-248001, Uttarakhand, India.

ABSTRACT

A corneal ulcer is a painful open sore on the cornea that can cause loss of vision and even blindness. The aim the study is to assess the prevalence, predisposing factors, etiology and treatment of corneal ulcer patients. 100 patients with corneal ulcer were included in the study. A detailed history with socio-demographic information, presenting complaints, predisposing factors, associated risk factors followed by drug therapy was noted carefully. Gender wise distribution showed that males (61%) were mostly affected by corneal ulcer as compared to females (39%). Occupation wise distribution showed that farmers (38%) were affected more as compared to others. Most commonly affected age group was between 41-60 years and majority of affected people were from rural areas (75%). Based on severity of the diseased condition, majority (39%) were diagnosed severe followed by mild (34%) to moderate (27%) among all corneal ulcer patients. The most common predisposing risk factor found for corneal ulcer was ocular trauma (42%). Bacterial infections (44%) were found more commonly than fungal infections (35%) and other causes. Antibiotics were mostly prescribed (44%) followed by traditional eye medicines (23%) and antifungal (16%) drugs. Such comprehensive studies are important to assess the specific epidemiological characteristics of corneal ulceration and are also necessary to define the magnitude of the problem in society, to design an efficient public health program for rapid referral, diagnosis, treatment, and to prevent corneal ulceration in the population at risk, especially in the developing nations.

Keywords: Corneal ulcer, antibiotics, ocular trauma, predisposing factors.

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***Address for Correspondence:**

Prashant Mathur, Associate Professor, Department of Pharmacy Practice, School of Pharmaceutical Sciences, Shri Guru Ram Rai University, Patelnagar, Dehradun-248001, Uttarakhand, India.

INTRODUCTION

A corneal ulcer is a painful open sore on the cornea that can cause loss of vision and even blindness. A corneal ulcer appears as a grey to white cloudy or translucent area on the normally transparent cornea. Corneal ulcers may sometimes be too small to see without sufficient magnification and lighting. Corneal ulcer present in all age groups, both gender and it is a sight threatening condition. Corneal ulcer varies significantly from country to country and even from region to region in terms of the epidemiological characteristics, demography, predisposing factors, clinical and microbiological profile[1-3].

In developing countries, corneal ulceration is a major cause of monocular blindness. This finding is confirmed by surveys in Africa and Asia. A recent report on the cause of blindness lists that corneal scarring is a second reason after cataract for blindness and visual disability in many of the developing nations in Asia, Africa, and the Middle East. Corneal ulceration results in 1.5 to 2 million new cases of corneal blindness annually, posing a major public health problem according to the World Health Organization (WHO) reports[4,5].

Both medical and surgical treatments are available in these cases. Medical therapy consists of antibiotics (general or topical), mydriatics and steroids. In case of medical treatment failure, resulting in ulcer perforation, surgical care, such as amniotic membrane transplantation, is generally required[6].

The aim of the present study is to determine the prevalence, predisposing factors, etiology and treatment of corneal ulcer patients attending the outpatient department of ophthalmology.

METHODOLOGY

The study was conducted at Shri Mahant Indiresh Hospital, Dehradun. 100 patients with corneal ulcer attending at the outpatient department of cornea were included in this study. A standardized data collection form includes patient's socio-demographic information as well as clinical information including, previous treatment, predisposing ocular conditions, and associated risk factors.

RESULTS & DISCUSSION

Prevalence of corneal ulcer patients was assessed by demographic analysis as shown in Table 1. Gender wise distribution showed that there were 61% male patients as compared to 39% female patients (Figure 1). Age wise distribution showed that most commonly affected age group was between 41-60 years (55%) followed by age group 21-40 years contributing 23%, age group >60 years contributing 14% while age group 0-20 years contributed very less among all age groups (8%). Occupation wise distribution showed that farmers (38%) were affected more followed by working professionals (24%), outdoor workers (19%), homemaker (11%) and students (8%). Distribution according to the area of residence (Figure 2) showed that majority of affected people was from rural areas (75%) while remaining was from urban areas (25%). Based on severity of the diseased condition, majority (39%) were diagnosed severe followed by mild (34%) to moderate (27%) among all corneal ulcer patients.

Table 1: Demographic analysis of corneal ulcer patients

S.No.	Prevalence factors	Number of subjects (%) (n=100)
1	**Gender**	
	Male	61 (61.00)
	Female	39 (39.00)
2	**Age (Years)**	
	0-20	08 (8.00)
	21-40	23 (23.00)
	41-60	55 (55.00)
	>60	14 (14.00)
3	**Occupation**	
	Farmers	38 (38.00)
	Outdoor workers	19 (19.00)
	Homemaker	11 (11.00)
	Students	08 (8.00)
	Working professionals	24 (24.00)
4	**Residing Area**	
	Rural	75 (75.00)
	Urban	25 (25.00)
5	**Severity**	
	Mild	34 (34.00)
	Moderate	27 (27.00)
	Severe	39 (39.00)

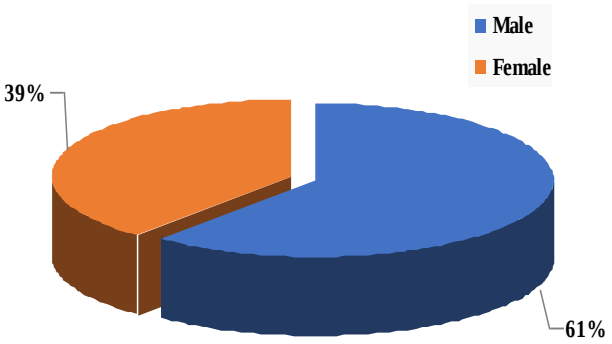

Figure1: Gender wise distribution of patients

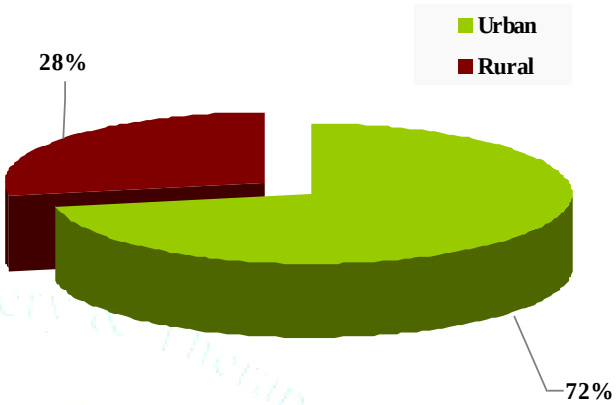

Figure 2: Area wise distribution of patients

It was further analyzed that most common predisposing risk factor found for corneal ulcer was ocular trauma (42%) while least common factor was keratoplasty (2%) as shown in Figure 3. From Figure 4, etiology found for corneal ulceration belongs to some infectious causative agents among whom bacterial infections alone (44%) were found more commonly than fungal infections alone (32%), combined bacterial and fungal infections (18%), viral infections (6%) while there were no case found to contain parasitic infectious agent.

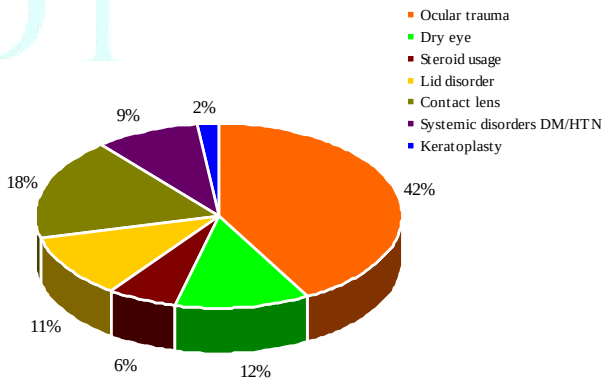

Figure 3: Distribution of predisposing factors among patients

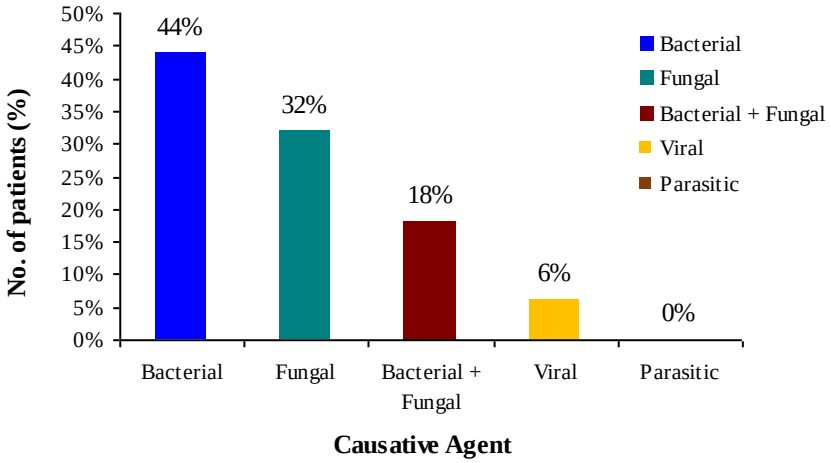

Figure 4: Etiology of corneal ulcers

Drug therapy analysis of corneal ulcer patients as per Table 2 showed that antibiotic therapy alone (44%) were mostly prescribed followed by antifungal therapy alone (35%), combined antibiotic + antifungal (19%) while antiviral alone (1%) and combined steroid + antibiotic + antiviral (1%) contributed very less in drug therapy among corneal ulcer patients.

Table 2: Drug therapy analysis

Drug therapy	No. of patients (%) (n=100)
Antifungal	35 (35.00)
Antibiotic	44 (44.00)
Antiviral	01 (1.00)
Antibiotic + Antifungal	19 (19.00)
Steroid + Antibiotic + Antiviral	01 (1.00)

CONCLUSION

Study concluded that corneal ulceration consists of bacterial infections more than fungal infections and was seen predominantly among males. Antibiotics were mostly prescribed drug category and ocular trauma is the most common predisposing risk factor among corneal ulcer patients. Comprehensive studies like this are necessary to assess the specific epidemiological characteristics of corneal ulceration, which are unique for each region and population and are also necessary to define the magnitude of the problem in society to design an efficient public health program for rapid referral, diagnosis, treatment and prevention of corneal ulceration in the population at risk, especially in the developing nations.

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