

Mycotic Keratitis In Central India

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Abstract- Introduction –Present study was done to clinico comparatively evaluate MycotickKeratitis in relation to its clinical picture and visual recovery.**Method-** The present study was conducted on 300 patients during the session 2008 to 2013. The patients were analyzed to have an over view of patient profile, predisposing factor microbiological status culture sensitivity and visual outcome after imparting requisite treatment.**Result :-** During the present study it was noticed that mycotickeratitis was present in 34 % of patients and mixed infection in 10% of patients were as other forms of microbial keratitis was noticed in rest of the patients. It was noted that patients involved in agriculture activity or those suffering from trauma inflicted with vegetative material had more risk of developing mycotickeratitis that is 76% where ascortico-steroid misuse was noted in 11 % and 13 % had idiopathic origin. Overall culture was positive in 12 % of mixed infection, 14 % of mycotickeratitis and culture was positive in 18 % of bacterial infection. In mycotickeratitis healing occurred in 62.2 % , surgical intervention in 11.53%, BCL in 14.4 % and perforation occurred in 11.87 %.

Conclusion –Present study showed that mycotickeratitis has male predominance with trauma by vegetative material,76% undetermined cause 13% and cortico-steroid misuse 11%.as main culprit

Index Terms- Mycotic, Keratitis Microbiology

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INTRODUCTION

Mycotic keratitis is one of the leading cause of avoidable blindness in developing nations ^{1,3,5} surveys in many parts of worlds have revealed that corneal scarring is an important cause of blindness and visual impairment (upadhyaya et al 1991; shrinivasan et al 1997; norina et al 2008; whitcher et al 1997; chirambo et al 1986) ^{16,18} blindness survey in Nepal (brilliant et al,1985) too showed that corneal trauma and ulceration are second leading cause of unilateral blindness after cataract and are responsible for 11.85% of all blindness. ^{2,11,17}

The incidence of microbial keratitis varies from place to place from USA has an incidence of 11 per 100,000 persons for microbial keratitis as compared to 799 per 100,000 persons in Nepal (upadhyaya et al 2001) ^{2,17} Epidemiological features and causative organisms for keratitis varies from region to region within the same country. ^{4,6,8,9}

The clinical diagnosis of mycotic keratitis often relies on a thorough specific history of infectious exposure, epidemiological trends and morphological feature (upadhyaya et al 2001). Furthermore, the course of the disease and patient management is directly affected by the lack of proper diagnosis and initiation of appropriate anti -mycotic treatment ^{3,10,11,13} To begin the proper management requires immaculate and accurate identification of mycotic organism. Therefore, the evaluation of the etiological diagnosis is region wise and sensitivity pattern of isolated mycotic microorganism provide the valuable information for initiation of their management. ⁸ For this, some studies in India subcontinent have provided the important data so this study was conducted in UPGRADED DEPARTMENT OF OPHTHALMOLOGY, N.S.C.B. Medical College and hospital, Jabalpur (M.P.)

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Most of the studies of mycotic keratitis have primarily evaluated epidemiological features, predisposing factors and

clinical features of corneal ulceration (Whitcher et al, 1997; Srinivasan et al, 1997; Norina et al, 2008; Upadhyaya et al, 1991; Williams et al, 1987), but this study along with the epidemiological pattern and identification of causative microorganisms, tried to include the sensitivity patterns of isolates, treatment modalities and their outcome. (Dhakhwa et al Nepal 2012), ^{14,15,12,18,19}

Materials and methods- The present study was conducted on 300 cases in UPGRADED DEPARTMENT OF OPHTHALMOLOGY, N.S.C.B. medical college and hospital, Jabalpur (M.P.) from 2008 to 2011 were included in the study. The patient was analyzed in accordance with demographic profile, predisposing factor. The mycotic keratitis status of patient was evaluated in reference to 10% KOH, gram's stain, culture sensitivity and treatment was advised in accordance with the diagnosis of the patient. Patients were seen consecutively after the initial clinical diagnosis of corneal ulceration was made. Ulceration was defined as a loss of the corneal epithelium with underlying stromal infiltration and suppuration associated with signs of inflammation with or without hypopyon.

Statistics: All case report forms were checked for completeness and inappropriate or illogical responses. The forms were entered using Microsoft 2007 Excel worksheet. The databases were validated and all inconsistencies and differences were resolved. Statistical analyses were performed using STATA 12 for windows (StataCorp LP, Texas, USA). Categorical data are presented as frequency counts (Percent) and compared using the chi-square or Fisher's exact statistic as appropriate. Odds Ratio and 95% Confidence Intervals were also presented for 2 x 2 contingency tables. The significance level was considered Alpha = 0.05 and at 95% confidence level.

Clinical procedure

Every patient was examined on the slit-lamp biomicroscope. The size of the epithelial defect after staining with fluorescein dye was measured with the variable slit on the slit-lamp and recorded in millimeters on a standardized form. The presence or absence of a hypopyon was recorded and the height of the hypopyon was measured in millimeters, and associated ocular conditions such as blepharitis, dacryocystitis, dry eyes, corneal anesthesia, lagophthalmos, any surgery on the cornea, use of contact lens, or ocular leprosy were noted. The use of topical corticosteroids was also noted. After a detailed ocular examination, a corneal scraping was performed under aseptic conditions on each ulcer by ophthalmologist using a flame sterilized Kimura spatula. Scrapings were performed in the slit

lamp after instillation of 4 % lignocaine (lidocaine) . Material was obtained from scraping, the leading edge and the base of each ulcer, was inoculated directly onto Sabaraud-Dextrose agar (SDA). Material from the corneal scraping was also taken on two separate glass slides for smear: one for Gram stain and the other for microscopic examination in the clinic as a KOH wet mount. All KOH smears were then sent to the laboratory for confirmation.

Laboratory Procedure

Fungal cultures inoculated onto SDA were incubated at 27'C, examined daily, and discarded after 2 weeks if no growth was present in culture. Microbial cultures were considered positive only if there was semi confluent growth at the site of inoculation on one solid medium associated with the identification of the organism of appropriate morphology and staining characteristics on Gram stain or KOH mounted corneal smears. The specific identification of fungi was identified by their colony characteristics on SDA. All culture positive samples were tested for their sensitivity pattern with commonly available used antimicrobials. Treatment decision was based on clinical judgment and response to empirical treatment. Culture and sensitivity pattern was taken into account after 2 weeks when culture sensitivity report was available of fungal growth.

Result:- In this study out of 300 cases 34 % had mycoticekeratits, 10% hade mixed infection and rest had other form of infectious keratits

Sr.NO.	Age	Male	Female
1.	Less than 30 years	100	70
2.	30-39 years	40	30
3.	40-49 years	30	10
4.	More than 50 years	14	6

Table -2 shows Age and Gender distribution of patient suffering from microbial keratitis

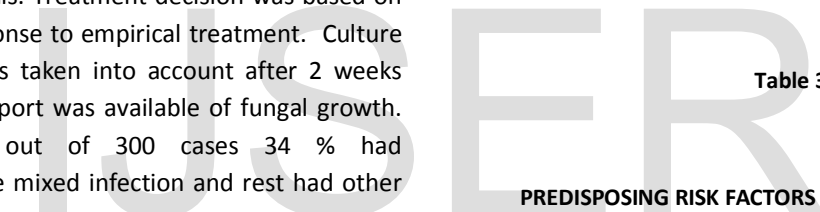


Table 3
PREDISPOSING RISK FACTORS FOR MYCOTIC KERATITS

Table 1

Prevalence of different types of keratitis

Bacterial	Fungal	Viral	Mixed
52%	34%	14%	10%

Table 1 Shows Prevalence of different types of microbial keratitis

Sr.No.	Risk factors	% at risk
1.	Trauma	76
2.	Cortico-steroid misuse	11
3.	Undertermined	13

Table 3 shows predisposing risk factors for mycotickeratits

Trauma was the most common predisposing risk factors for mycotickeratits

Epidemiological characteristics

300 cases with the clinical diagnosis of microbial corneal ulcers were enrolled in this study 184 cases were males and 116 were females. Ulceration occurred most frequently in the age group of 30-39 years in 170 cases, followed by 70 cases of age group less than 30

Table - 4

Sr.No.	Culture	Organism	%
1.	Positive	Candida	8

Table-2

2.	Positive	Aspergillus	6
3.	Positive	Mixed	12

Table -4 Shows Microbial growth pattern in deferent culture media

Mycotic keratitis is more common in males with injury by vegetative body and can be managed efficiently. It has been found that fungal infection is very commonly prevalent in developing countries like our and it should be treated meticulously with various medical and surgical modalities of treatment as early as possible to reduce the burden of corneal blindness.

Table 5

Type of intervention (treatment given) and their outcome

Sr. no.	Type of Intervention	Fungal keratitis	Mixed
1.	Surgery	11.53 %	
2.	BCL	14.4 %	
3.	Perforation	11.87 %	
4.	Healed	62.2 %	100

Table 5 shows treatment given and outcome of intervention

Discussion

In many parts of the world, mainly in the developing countries like India, microbial keratitis is the major cause of preventable blindness. As a result, corneal scarring is the second only to cataract as the most common cause of visual disability in the world today (Whitcher et al 1997; Srinivasan et al 1997¹⁸; Norina et al 2008¹²; Upadhyaya et al 1991¹⁴; Chirambo et al 1986⁵; Brilliant LB et al, 1985)¹ It was noted that patients involved in agriculture activity or those suffering from trauma inflicted with vegetative material had more risk of developing microbial keratitis that is 76 % undetermined cause 13% and cortico-steroid misuse 11%. as main culprit (Whitcher JP, Srinivasan M et al (1997))¹⁸ Over all the culture was positive in 12 % of mixed infection and 40 % of mycotic keratitis In mycotic keratitis surgery was required in 11.53%, BCL 4.4 % perforation in 11.8 % and mycotic keratitis healed in 62.2%. and in mixed infection healing occurred in 100% of patients. B Rautaraya - 2011² Study shows that **mycotic keratitis** is more is common in males with vegetative body injury and should be meticulously treated.

Conclusion-

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Conflict of interest - Non

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