



MICROBIOLOGICAL PROFILE IN PATIENTS WITH KERATITIS: AN OBSERVATIONAL STUDY

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Abstract

Background: Infectious keratitis is an important cause of corneal morbidity and visual impairment. Microbiological evaluation helps identify the causative organism and guide appropriate antimicrobial therapy.

Aim: To study the microbiological profile and associated risk factors among patients presenting with keratitis at VEH, Bidar.

Materials and Methods: A prospective observational study was conducted in the Department of Ophthalmology, VEH, Bidar, from February 2024 to July 2024. A total of 100 patients with clinically suspected infectious keratitis were included. Corneal scrapings were subjected to direct microscopy and microbiological culture.

Results: Among 100 patients, 62 (62%) were males and 38 (38%) were females. The most commonly affected age group was 41–60 years. Ocular trauma was the most frequent predisposing factor. Microbiological examination was positive in 68 (68%) patients: bacterial organisms in 38 (38%), fungal organisms in 26 (26%), and mixed bacterial-fungal infection in 4 (4%). Thirty-two (32%) were culture negative. Staphylococcus aureus was the commonest bacterial isolate and Fusarium the commonest fungal isolate.

Conclusion: Infectious keratitis is an important ocular problem among patients attending VEH, Bidar. Corneal scraping and microbiological examination are valuable for identifying causative organisms and guiding treatment.

Keywords: Infectious keratitis; Microbiological profile; Corneal ulcer; Corneal scraping; Bacterial keratitis; Fungal keratitis; Staphylococcus aureus; Fusarium; Bidar.

Introduction

Keratitis is an inflammatory condition of the cornea that may result in corneal ulceration, scarring and permanent visual impairment. Infectious keratitis is caused by a variety of microorganisms, particularly bacteria and fungi. The microbiological profile varies with climate, occupation, trauma, contact lens use and other predisposing factors. The present study was undertaken to determine the microbiological profile of keratitis among patients attending VEH, Bidar.

Aim and Objectives

To study the microbiological profile of patients presenting with keratitis at VEH, Bidar; identify common microorganisms; study demographic characteristics and predisposing factors; and determine culture-positive and culture-negative proportions.

Materials and Methods

Design: Prospective observational study. Setting: Department of Ophthalmology, VEH, Bidar, Karnataka. Period: February 2024 to July 2024. Sample: 100 patients. Detailed history, visual acuity and slit-lamp examination were performed. Corneal scrapings were collected aseptically from the edge and base of the ulcer and examined by direct microscopy and bacterial/fungal culture using standard laboratory procedures.

Results

Of the 100 patients, 62 were males and 38 were females. The majority belonged to the 41–60-year age group. Ocular trauma was the most frequent predisposing factor.

Table 1. Microbiological Findings

Finding	Number	Percentage
Bacterial infection	38	38%
Fungal infection	26	26%
Mixed infection	4	4%
Culture negative	32	32%
Total	100	100%

Table 2. Predisposing Factors

Factor	Number	Percentage
Vegetative trauma	24	24%
Other trauma/foreign body	18	18%
Diabetes	12	12%

mellitus		
Previous ocular surgery	6	6%
Contact lens use	5	5%
Previous topical steroid use	7	7%
No identifiable factor	28	28%
Total	100	100%

Table 3. Bacterial Isolates

Organism	Number
Staphylococcus aureus	14
Staphylococcus epidermidis	7
Pseudomonas aeruginosa	6
Streptococcus spp.	5
Klebsiella spp.	3
Other bacteria	3
Total	38

Table 4. Fungal Isolates

Organism	Number
Fusarium spp.	10
Aspergillus spp.	8
Dematiaceous fungi	4
Candida spp.	2
Other fungi	2
Total	26

Discussion

In this 100-patient observational study, males constituted the majority and ocular trauma was the most frequent predisposing factor. Bacterial infection was more common than fungal infection. *Staphylococcus aureus* and *Fusarium* were the predominant bacterial and fungal isolates, respectively. Microbiological examination of corneal scrapings remains important, particularly in moderate-to-severe, atypical or treatment-resistant keratitis.

Limitations

This was a single-centre study with a sample size of 100 patients. Culture-negative cases may have been influenced by prior antimicrobial treatment, sample adequacy or organisms not detected by routine culture.

Conclusion

Infectious keratitis is an important cause of ocular morbidity among patients attending VEH, Bidar. Microbiological evaluation of corneal scrapings can assist in identifying causative organisms and guiding appropriate antimicrobial treatment.

Important note: The numerical results are the previously prepared sample/hypothetical 100-patient dataset and should be replaced with actual records before publication or institutional submission.

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