

Clinico-Microbiological Profile of Keratitis in a Tertiary Care Hospital

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Introduction

Corneal infection or Keratitis is a leading cause of ocular morbidity and blindness worldwide. Keratitis is a suppurative, ulcerative, and sight threatening infection of the cornea that leads to loss of the eye if mistreated or left untreated which is a common scenario in developing countries including India. The National Programme for Control of Blindness stresses on early diagnosis & management of causes of blindness like corneal ulcer (requiring transplant of donated eyes), Cataract, Glaucoma and Refractive errors. National Programme for Control of Blindness-India, in a report ranks trachoma and other corneal scarring at 3rd position and Glaucoma at 5th position both being practically inevitable complications of keratitis at advanced stages. Corneal infection thus can be considered to be the root to almost half of the prevalent causes of blindness in India. Emerging antibiotic resistance makes it important for us to know the present and emerging pathological trends treatment of which requires formulation of an uncompromising protocol such as the antibiogram prepared in the study. The dissemination of the results of this study will help reduce global burden of blindness as a whole.

Purpose

To determine clinico - microbiological profile of keratitis in a tertiary care hospital and to know the antibiogram of the organisms causing it.

Materials and methods

Two hundred and nine patients presenting with keratitis were prospectively followed. Age, gender, occupation, history of any predisposing factor like trauma, past and current use of ocular medicine, contact lens use and clinical presentation was recorded. Microbiological profile was analyzed and the sensitivity/resistance of the isolated strains was tested.

Results

Presenting complains of the patients complained were redness in eye (100%), watering of eyes (100%), photophobia (96%), blurred vision (90%) and headache (2%). Of the 209 cases studied, microscopic examination revealed microorganism (fungi and bacteria) in 25.4% (53/209) and culture yielded growth in 38.3% (80/209). Out of these 80 cases of growth, 62 fungi cases were isolated, 18 bacterial cases were isolated. Among the identified fungi, the most frequent isolated agent were *Aspergillus flavus* (22.5%) and *Fusarium solani* (15.1%), *Aspergillus niger* (12.9%), followed by *Aspergillus fumigatus* (11.3%) *Penicillium* spp. (4.8%), *Candida* spp. (6.4%), *Candida parapsilosis* (3.2%), *Aspergillus* spp. (3.2%), *Aspergillus nidulans* (1.6%) and *Alternaria alternata* (4.8%). Among the bacteria, *Staphylococcus aureus* (50%), Coagulase negative *Staphylococcus* (22.2%) and *Escherichia coli* (27.7%) were identified. *Aspergillus* spp, *Aspergillus fumigatus* and *Aspergillus flavus* were found susceptible to amphotericin B and Itraconazole. *Fusarium solani* was found sensitive to amphotericin B. *Candida parapsilosis* and other Non albicans *Candida* were found susceptible to amphotericin B and were found resistant to fluconazole and itraconazole. *Staphylococcus aureus* was found sensitive to vancomycin, ciprofloxacin, amikacin, augmentin, erythromycin, and clindamycin. It was found resistant to penicillin. Coagulase Negative *Staphylococcus* was found susceptible to vancomycin, amikacin, erythromycin and clindamycin. *Escherichia coli* was sensitive to amikacin, ciprofloxacin and cefotaxime and resistant to cefuroxime.

Conclusion

The most commonly isolated organism were *Aspergillus flavus* and *Fusarium solani*. The most common predisposing cause of microbial keratitis was corneal trauma. Infection with most fungus is amenable to treatment with amphotericin B and itraconazole. Bacterial keratitis is sensitive to treatment by vancomycin, ciprofloxacin, amikacin, augmentin, erythromycin, and clindamycin..