

## Abstract

### **TITLE: Clinical Study on profile and spectrum of bacterial, and fungal Corneal ulcers in a tertiary care hospital in Chennai**

**AIM :** To study the demography of various corneal ulcers and to study the aetiology, risk factors and clinical presentation of various Corneal ulcers

**OBJECTIVES:** To study the incidence, predisposing factors and epidemiological characteristics of Corneal ulcers and to study the various modes of presentation of Corneal ulcers.

**METHODS AND MATERIALS:** 100 patients who presented with various forms of infectious corneal ulcers were evaluated and Detailed history was obtained from each patient. Baseline visual acuity were checked and subjected to detailed anterior segment examination with slit lamp biomicroscopy and findings were documented with colour coded diagrams. Corneal scraping was done and sent for gram staining and KOH mount. Patients' stay in the hospital was documented and the complications/ recovery were monitored. All patients were followed up consecutively after the initial examination was done. Further follow up visits was decided on a case-by-case basis, depending on disease severity.

**RESULTS:** Among 100 patients, 71 patients were males and 29 were females, the major presentation age group is between 41-50 years. Majority of them (35/100) were labourer and farmers(22/100) by occupation, illiterate (93/100) ,People coming from rural areas (61/100) was commonly associated. A majority of them (67/100) were diabetic, majority of them (36/100) presented within 3 days of symptom onset. During presentation (77/100) many patients had hypopyon. 83 patients gave a definite source of traumatic agent, with plant material being the most common offending agent (37/100). 17 patients did not know the offending agent. On analysing the ulcer location, we found a majority (42/100) patients presented with central corneal ulcer. 30 had paracentral ulcers and 28 patients presented with peripheral corneal ulcer. With syringing , we observed that 34/100 patients had mucoid regurgitation.Of the culture positive cases, (n=50), bacterial colonies could be recovered in 32 patients. 25 were gram positive 7 were gram negative. Fungal colonies were grown in 13 patients, who were KOH positive in staining. Mixed bacterial and fungal colonies were found in 25 patients. Pure bacterial colonies were

isolated in 7 patients. The remaining 5 patients had acanthamoebal growth in staining and culture methods. None of them were contact lens users. With successful medical management, 63 patients responded well, some of them needed intrastromal voriconazole injections. 47 patients progressed to perforation/impending perforation, in spite of all modalities of medical management, required Therapeutic keratoplasty. 15 of these patients required regraft due to multiple reinfection. This was found to be significantly higher in those patients who presented late and had mixed organisms in microbiological analysis

**CONCLUSION:** Corneal ulceration is a common problem,, and often followed by corneal injuries. Demography and risk factors of infections vary but predominantly involves males and is frequently related to trauma. Mixed ulcers are the commonest infection. The Study emphasises the need for microbiological diagnosis for treatment. Early presentation and the nature of organism plays a major role in healing of ulcer. Our results highlight the importance of microbiologic diagnosis for infectious keratitis. The vast majority of corneal ulcers seen clinically have mixed bacterial and fungal etiology. Empirical treatment based on clinical examination alone will not be sufficient.

Corneal ulcer is an ophthalmic emergency. In a developing country like ours, the impact of corneal blindness is huge. Subjecting corneal scraping samples for microbiological investigation is crucial for instituting appropriate treatment. Creating awareness among public regarding eye hygiene will go a long way in avoiding corneal blindness.