COMMENTARY

A report on fungal keratitis

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Keratitis is a corneal inflammation brought on by bacteria, fungi, viruses, and parasites. Keratitis is the most common fungal infection in tropical nations, including India, while it can also affect the orbit, lids, lacrimal apparatus, sclera, conjunctiva, and intra-ocular tissues. A fungal infection of the cornea is known as fungal keratitis (also known as keratomycosis or Mycotic keratitis). It typically affects the corneal epithelium and stroma, though in more severe cases, the endothelium and anterior chamber of the eye may also be affected. Leber was the first to describe it in Germany in 1879. It has since been recognized as a major public health issue that causes vision loss and blindness, particularly in developing nations, and it now accounts for 40-50 percent of culture-proven infectious keratitis. Fungal keratitis remains a diagnostic and therapeutic challenge for ophthalmic physicians, as these fungal infections of the cornea frequently result in corneal melting, vision impairment, and irreversible ocular damage if not recognized and treated early. As a result, more sensitive and specific diagnostic approaches for the early diagnosis of fungal keratitis are required. For better clinical outcomes, effective antifungal drugs with excellent ocular tissue penetration are also sought.

Corneal infections, like cataracts, are a critical concern, and fungal infections of the cornea have emerged as a major eye disease around the world. Fungal etiology corneal infection is quite common in India, accounting for at least half of all culture positive cases. The prevalence rate, on the other hand, differs from one country to the next, as well as from one demographic to the next within the same country. The dominance of fungal keratitis, notably *Fusarium* and *Aspergillus*, has been recorded in several literatures in South India for more than a decade. *Fusarium* and *Aspergillus* species are widely distributed in nature, causing severe diseases in major crops as well as immunocompromised individuals, and have long been thought to be important pathogens in eye infections, particularly keratitis. Regardless of geographical location, *Fusarium* and *Aspergillus* species are being identified in vast numbers from corneal ulcers in India. There are several identified risk factors for fungal keratitis, including: The most prevalent predisposing factor is an eye injury caused by vegetative matter. According to the incidence anticipated in several research, trauma may predispose to ulcerative keratitis in 23-55 percent of patients. In cases of fungal keratitis, a common history is that a young adult engaged in agricultural or outdoor work is injured by vegetative matter and develops an ulcerative lesion in 10-15 days. The disease's peak months coincide with harvesting season, when the risk of injury from contaminated vegetative matter is greatest. The occurrence of filamentous fungal keratitis is highly influenced by environmental conditions like as humidity, rainfall, and wind. Overuse of contact lenses, particularly hydrogel contact lenses, is dangerous. Chronic Keratitis caused by herpes simplex, herpes zoster, or vernal keratoconjunctivitis; Corneal surgery such as penetrating keratoplasty, clear cornea (suture less) cataract surgery, photorefractive keratectomy, or Laser in Situ Keratomileusis (LASIK); Chronic Keratitis caused by herpes simplex, herpes zoster, or Laser in Situ Keratomile Allergic conjunctivitis caused by airborne or bacterial toxins in tears or chemical agents causing ocular harm, and so on.

Delay in receiving suitable treatment might result in complications such as blindness and corneal perforation, which necessitates a surgical operation. Treatment based on precise fungi identification and antifungal susceptibility produces better results than treatment with broad-spectrum antibiotics. Treatment is determined on the etiological agent as well as the depth of the lesion. Topical medicines such as natamycin (5%) or amphotericin B 0.15 percent are commonly used as first-line therapy for superficial keratitis, but extensive lesions involving the corneal stroma necessitate the addition of systemic therapy, such as oral ketoconazole/itraconazole, or fluconazole.

Negative cultures during treatment do not imply that the infection has been eradicated, and the fungus may be actively reproducing deep inside the stroma; hence, long-term therapy is recommended. In superficial keratitis, topical therapy is given hourly for a minimum of 6 weeks, and in deep keratitis or keratitis caused by filamentous fungus, therapy is frequently extended for 12 weeks. Surgical debridement, such as penetrating keratoplasty (full thickness corneal grafting), is performed if corneal infection persists despite aggressive antifungal medication or in patients with impending perforation and the presence of a descemetocele.

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