

Commentary: Tackling the “silent epidemic”

Corneal opacity is the fifth leading cause of blindness globally, accounting for ~3.2% of all cases. Approximately 6 million people are affected by moderate or severe corneal blindness. In addition, 1 to 2 million cases of unilateral blindness due to corneal opacity gets added annually, highlighting an ongoing

and unchecked societal and economic burden.^[1,2] The most common cause of corneal blindness in China and some developing countries like India are infective keratitis (IK). Recognized rightly as a “silent epidemic”, it has been proposed that IK be designated as a “neglected tropical disease”, highlighting the magnitude of the problem, and soliciting global efforts towards alleviating the societal and humanistic burden in developing countries.^[2,3]

The incidence of IK has been estimated to be in the range of 2.5–799 cases per 100,000 population annually. A higher prevalence is seen in low-income countries, secondary to lack of literacy, poor healthcare infrastructure, lack of education, trauma, agrarian population, low socioeconomic status and a tropical climate more prone to infections.^[1] Even in developed countries like the UK, the incidence was 34.7 per 100,000 population per year, between 2009 and 2019, indicating a persistent burden.^[4] In 2010, with an incidence of 2.5 to 27.6 per 100,000 population per year, the US spent an estimated 175 million dollars on the treatment of IK. Despite the lack of surveillance and underreporting, infective keratitis in India is much higher, at 113 per 100,000 population per year.^[2] Complications such as scarring and the need for keratoplasty (therapeutic, tectonic, optical) add to the financial burden, and stretch the limited pool of cornea donors.

In Asia and Africa, amongst those diagnosed with IK, ~45–71% of the patients were illiterate, and 62–79% of them resided in rural areas with poorer access to healthcare facilities. They also had more severe disease and poorer outcomes.^[1]

A crucial factor that determines the outcome of IK is early diagnosis and prompt treatment. Lack of access to a trained ophthalmologist in rural areas and the economic burden of visiting the nearest secondary or tertiary care center delays the treatment, resulting in poorer outcomes. This paper reveals that the financial burden of treating fungal keratitis is significantly higher than bacterial keratitis. Various reasons for the same are the higher cost of the medications, the need for more than one medication, higher risk of treatment failure with need for surgery, and a more prolonged treatment for fungal keratitis. However, it does not consider the actual cost of consultation or investigation that would further increase the financial burden on the patient. The added indirect costs of loss of revenue to the family also severely cripples their limited resources as most cases of IK require multiple visits.^[5] The economic cost is at times higher than the person's daily wage, resulting in non-compliance with medications and follow-up.

Devising a national program to alleviate corneal blindness due to infective keratitis is essential to tackle this “silent epidemic”. Increasing health awareness among the rural population, training of the medical social worker to identify patients with early corneal infections, and prompt referral is a valuable strategy. The role of vision-care centers in rural areas and smaller cities have also proven to be a boon in taking eye-care to the local community. Training vision-care technicians or local ophthalmologists to identify and initiate treatment can significantly reduce the financial burden due to prompt and cheaper access to eye care. The benefit of tele-consultation with a cornea specialist using tele-ophthalmology and prompt referral to higher centers ensures care is not compromised. A recent publication by Komal *et al.*^[6] reported a saving of approximately INR 114,000 for the community by managing patients at the vision care centre and extrapolating it to a 10-year period; the amount saved was approximately INR 7,05,8400. A similar study done in Hyderabad estimated a 1/3rd reduction in cost of availing refractive services using the vision-care model in smaller cities and villages.

Infective keratitis is the predominant cause of corneal blindness in the developing world and access to affordable health care is one of the most pressing issues in managing the problem.

This paper gives an overview of the cost involved, and would help strategize and implement effective programs to tackle IK.

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| Quick Response Code: | Website: www.ijo.in |
|  | DOI: 10.4103/ijo.IJO_3069_21 |
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Cite this article as: Srinivasan B, Iyer G, Agarwal S. Commentary: Tackling the “silent epidemic”. *Indian J Ophthalmol* 2022;70:1195-6.