



## The Outbreak of Highly Contagious Conjunctivitis (Pink Eye) in Major Cities of Pakistan

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The white part of our eyes is surrounded by a thin layer called conjunctiva. There are several tiny blood vessels in this layer, which, upon inflammation, become red. This condition is known as conjunctivitis. Moreover, due to the red appearance, it is also called “pink eye”. Conjunctivitis can be categorized in different ways, such as severity, chronicity, and the level to which the adjacent tissues are involved. Conjunctivitis can be due to infectious and non-infectious agents, while severe conjunctivitis is generally characterized by prominent eyelid swelling associated with purulent discharge [1-4]. The most prevalent cause of infectious conjunctivitis is viral conjunctivitis, followed by bacterial conjunctivitis. However, the most prevalent causes of non-infectious conjunctivitis are toxin-induced and allergic conjunctivitis. Based on the duration of inflammation, conjunctivitis can be classified as acute (onset within four weeks or less), subacute (onset within four weeks or less), or chronic (lasting greater than four weeks) [5-8]. Viral conjunctivitis, the most prevalent cause of infectious conjunctivitis, normally does not require any treatment; the signs and symptoms at presentation vary from case to case. The most common factors related to bacterial conjunctivitis, the second most prevalent cause of infectious conjunctivitis (most uncomplicated cases take 7 to 14 days to recover), are lack of conjunctivitis history, mattering and sticking of eyelids upon waking, and absence of irritation in eyes [9-13]. Bacterial conjunctivitis can be treated with topical antibiotics that significantly reduce the duration of inflammation. Systemic treatment along with topical antibiotics is required for conjunctivitis that is

caused by sexually transmitted infections like Gonorrhea and Chlamydia. Allergic conjunctivitis affects up to 40% of the population, although only a tiny percentage of these people require medical care. The most common symptom of allergic conjunctivitis is itching. It can be treated with mast cell inhibitors and topical antihistamines [14].

In the last week of August, an adenovirus-based conjunctivitis outbreak emerged, as various media sources claimed that the conjunctivitis epidemic in Karachi was caused by the weather, a subpar hygiene system, and the compromised cleaning practices [15]. According to statistics from the first week of September 2023, every major hospital in Karachi received more than 100 daily reports of patients with acute conjunctivitis seeking medical attention [16-19]. In a previous study conducted in Karachi, it was shown that a similar outbreak in the city occurred in the 1990s and 75% of the cases were caused by Adenovirus while bacterial conjunctivitis accounted for 20% of the total cases while the same pattern is observed in the recent ongoing outbreak as well [19, 20]. The health authorities also implemented school closures as a precautionary measure to curb the transmission of the virus among children. Another research study involving schoolchildren in Karachi revealed that ~19% of cases were related to allergic conjunctivitis. Furthermore, the study found a clear association between advancing age and an increased likelihood of developing allergic conjunctivitis. A similar situation emerged in India as well, when the state's health department stated that over 38,000 cases of conjunctivitis were reported in Himachal

Pradesh in August, Following an epidemic of conjunctivitis, the Longding district administration in Arunachal Pradesh directed the temporary closure of all schools in the Kanubari sub-division. Nagaland (a state in northeastern India) also shut its schools as a result of a rise in cases. Similarly, in Indian Bengal, conjunctivitis was associated with the swelling, inflammation, itching, and tearing of the eyes, often accompanied by discharge and crusting, and experts found the Adenovirus as the main cause of this outbreak, although in some cases, Herpes simplex virus (HSV) and varicella-zoster virus (VZV) were the causes as well. In August, Vietnam also saw a greater surge in pink eye cases, mainly affecting children and newborn kids, with 20% of the cases having severe complications [21-23].

Though Lahore is the second-largest city in Pakistan according to demographic measures, and hundreds of people travel daily from Karachi to other parts of Pakistan, it is quite understandable that Lahore has become the second victim city of the highly contagious viral conjunctivitis, reaching 40% prevalence of infection [20]. As per the latest reports, more than 200 individuals in Lahore's major hospitals had severe conjunctivitis [20]. The primary and secondary health department of the Punjab, which is based in Lahore, issued an advisory suggesting the greater need for prevention strategies such as the use of hand sanitizer, avoiding touching eyes without proper hand hygiene, and refraining from using items that had come into contact with infected individuals. Furthermore, there are a few eye drops in the market, however, only recommended drops must be used [24]. The key factors for this dissemination are poor sanitation, severe rains that clog sewerage systems in many parts of the city, and an absence of awareness of the infection's prevention and transmission [21].

## CONCLUSION

In most cases of bacterial conjunctivitis, there is no need for treatment because the condition usually resolves on its own. Antibiotics should be used to treat conjunctivitis in contact lens users and conjunctivitis in cases of chlamydia or gonorrhoea. Viral conjunctivitis is treated with supportive therapy and antihistamines, and mast cell stabilizer therapy reduces allergic conjunctivitis symptoms. Pakistan, as well as some parts of its neighboring country India, are under the surge of this outbreak as a result of low hygiene, bad sanitation systems, and the current climate, higher rainfall that creates humid circumstances that are favorable conditions for the survival of etiological agents of conjunctivitis and their possible transmission. Lack of awareness among the masses regarding the prevention, control, and treatment of conjunctivitis are also major contributing factor to the current spread of conjunctivitis. It is highly recommended that health authorities take these factors specified attentively in order to stop this alarming and highly transmissible infection.

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## CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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