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A Review :Pink Eye

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Abstract:
The goal of current study on pink eye (conjunctivitis) is to comprehend its therapy, diagnosis, and epidemiology. Pathogens such as Enterovirus C have produced widespread epidemics of viral conjunctivitis in South Asia, which have been made worse by inadequate sanitation and congested living circumstances. While public health initiatives prioritize cleanliness and preventive care, diagnostic tool advancements like metagenomic sequencing have improved infection identification. Antibiotic abuse is still common, despite the fact that most instances resolve on their own, which emphasizes the need for increased awareness. The significance of public health initiatives is highlighted by the fact that current treatment tactics are in line with cause-specific, customized treatments.

Keywords:
Conjunctivitis, Enterovirus C, diagnostic advances, viral outbreak, hygiene, metagenomic sequencing, antibiotic misuse, public health, pink eye management

Introduction:

The inflammation or infection of the conjunctiva, the membrane that covers the inner eyelid and the white portion of the eye, is known as pink eye, or conjunctivitis. Conjunctivitis cases have recently increased, especially in children, in places like Delhi, Kolkata, Vadodara, and the northeastern province of Arunachal Pradesh. S.T. Quellmaz originally reported neonatal conjunctivitis (*ophthalmia neonatorum*) in 1750. More than 80% of all acute cases of conjunctivitis are allegedly diagnosed by non-ophthalmologists, including internists, family care physicians, pediatricians, and nurse practitioners. It is divided into two parts: the bulbar part, which covers the globe, and the tarsal part, which covers the lids. Usually translucent, it can be injected to become pink or scarlet when inflamed, providing rise to the nickname "pink eye[1]."

Etiology:

Pink Disease has numerous issues that have not been resolved by clinical observations or experiments. We don't know what caused it. There is no explanation for its unusual age incidence. Its pathophysiology is unknown. We are unable to demonstrate any curative measures in its treatment. The only thing left to do is support nature's healing forces. Nevertheless, there are differing views on how the help ought to be provided.

I have had the chance to study and treat several children with Pink Disease in my work in hospitals and in practice. In this thesis, I will use this clinical experience along with a review of the literature to examine the disease's unknown origin. The figures in this thesis are derived from an analysis of Pink Disease case notes that were treated at the Babies' Hospital in Newcastle over the previous fifteen years.

In an effort to identify any potential side effects, I have also looked at a number of cases following recovery from the Pink Disease[8].

Pathophysiology:

The surface tissues of the eye and the ocular adnexa are colonized by common flora such as streptococci, staphylococci, and corynebacteria. Changes in the bacterial species, bacterial titer, or host defense may lead to a clinical illness. Additionally, external contamination (e.g., swimming or contact lens use), topical or systemic antibiotic treatment, or transfer from adjacent infectious locations (e.g., eye rubbing) might alter the flora. The body's primary defense against infection is the layer of epithelium that covers the conjunctiva. Disruption of this

barrier could lead to infection. Secondary defenses include hematologic immune systems carried by the conjunctival vasculature, tear film immunoglobulins, lysozyme, and the rinsing effects of lacrimation and blinking[9-10].

Treatment:

Pink eye, or **conjunctivitis**, can have several causes, including bacterial, viral, allergic, or irritant-related. Treatment depends on the underlying cause[11-12]:

1. Viral Conjunctivitis

- **Cause**: Often due to adenoviruses.
- **Symptoms**: Watery discharge, red eyes, and possibly cold-like symptoms.
- **Treatment**:
  - Usually self-limiting (resolves within 1–2 weeks).
  - Use **cool compresses** for comfort.
  - **Artificial tears** (lubricating eye drops) can relieve irritation.
  - Avoid touching or rubbing eyes to prevent spreading.

2. Bacterial Conjunctivitis

- **Cause**: Bacteria like *Staphylococcus* or *Streptococcus* species.
- **Symptoms**: Thick, yellow-green discharge, eyelids stuck together upon waking.
- **Treatment**:
  - **Antibiotic eye drops or ointments** (e.g., tobramycin, erythromycin, or ofloxacin).
  - Warm compresses to help loosen discharge

3. Allergic Conjunctivitis

- **Cause**: Allergens like pollen, dust, or pet dander.
- **Symptoms**: Itchy, watery eyes with redness and swelling.
- **Treatment**:
  - **Antihistamine eye drops** (e.g., ketotifen or olopatadine).
  - Oral antihistamines for severe cases.
  - Avoid allergen exposure; use cold compresses for relief

4. Chemical or Irritant Conjunctivitis

- **Cause**: Smoke, chlorine, or other irritants.
- **Symptoms**: Redness and discomfort after exposure.
- **Treatment**:
  - Rinse eyes thoroughly with **sterile saline** or clean water.
  - Avoid further exposure to irritants.

Diagnosis:

1.1. 1. Medical History

- **Symptoms**: Nature of redness, discharge, itchiness, swelling, or pain.
- **Onset**: Sudden or gradual?
- **Associated Symptoms**: Cold, sore throat, fever, or exposure to allergens/irritants?
- **Exposure**: Contact with someone with conjunctivitis or use of contaminated makeup/contact lenses?

1.1. 2. Physical Examination

- **Eye Appearance**:
  - **Bacterial**: Thick, yellow-green discharge; eyelids stuck shut.
  - **Viral**: Watery discharge; redness; possibly one eye initially affected, spreading to the other.

- **Allergic**: Itchy, watery eyes; swollen eyelids; both eyes affected.
- **Irritant**: Redness and irritation after exposure to a chemical or pollutant.

- **Conjunctival Swelling**: Indicates inflammation.

1.1. 3. Specialized Tests **(if needed):**

- **Fluorescein Stain**: Checks for corneal abrasions or ulcers, especially if pain is severe.
- **Discharge Culture**: If bacterial infection is suspected, a swab of the discharge may identify the causative organism.
- **Allergy Testing**: For recurrent or severe allergic conjunctivitis.
- **Vision Test**: Ensures no involvement of the cornea or other parts of the eye.

Outbreak in India:

Since infectious conjunctivitis outbreaks may be the precursors of a worldwide pandemic, they are of utmost importance to public health. It is commonly believed that infectious conjunctivitis has a viral aetiology, despite the fact that the precise cause is rarely confirmed microbiologically. Conventional "gold-standard" microbiology techniques may not be the most effective for identifying unexpected infections due to their high risk of producing false-negative results.

Unbiased diagnostic techniques like met genomic RNA deep sequencing analysis (RNA-seq) allow the discovery of unexpected diseases like bacteria, fungi, viruses, DNA, and anophelics in this age of unparalleled global spread of new illnesses. Conjunctivitis outbreaks are uncommon in the US, but more common and typically seasonal in other parts of the world, such Asia and Africa[2-3].

Strategies	Objectives
• Conduct Immediate Public Health Campaigns	• Design informative brochures, posters, and flyers explaining conjunctivitis, its symptoms, and preventive measures. • Include clear graphics and simple language to make the information accessible to all demographics[4].
• Promote Hygiene Practices	• Emphasize the importance of regular hand washing with soap and water. • Encourage individuals to wash their hands before and after touching their eyes, face, or any potentially contaminated surfaces. • Highlight the importance of maintaining a clean environment to prevent the spread of the virus causing conjunctivitis. • Reinforce the importance of completing any prescribed treatment regimen to prevent the recurrence or spreading of the infection[5].
• Coordinate with Medical Professionals	• Collaborating with professionals from different healthcare disciplines allows for a holistic approach to patient care. • Collaborating allows for the sharing of knowledge, ensuring that all aspects of a patient's health are considered and addressed appropriately. • Clear and open communication is essential for sharing patient information, discussing treatment plans, and ensuring Continuity of care[6].
• Monitor and Report Cases	• Establish a system to collect data from healthcare facilities, including hospitals, clinics, and eye care centers. • Ensure that healthcare providers are trained to recognize and report cases of conjunctivitis promptly. • Collaborate with pharmacies to monitor the sales of over-the-counter eye drops and medications commonly used for Conjunctivitis[7].

Table.1: The government's several strategies to prevent pink eye from spreading in Delhi and Kolkata[4-7]

Recent Study on Pink Eye:

Recent studies on pink eye (conjunctivitis) highlight the following key findings:

1. **Viral Epidemics**: An outbreak in South Asia, particularly in Nepal, Pakistan, and parts of India, was driven by Enterovirus C (Coxsackievirus strain A24). This highly contagious virus caused acute hemorrhagic

conjunctivitis, with symptoms such as redness, watery discharge, and lid swelling. Management primarily involved supportive care and hygiene measures.

2. **Impact of Climate and Hygiene**: Poor sanitation, high humidity, and crowded living conditions exacerbated the spread of viral conjunctivitis in regions like Pakistan. Preventive measures such as improved hand hygiene and avoiding contaminated objects were emphasized.
3. **Diagnostic Advances**: Met genomic sequencing has been used to identify specific pathogens causing conjunctivitis. This method provided insights into the genetic diversity of conjunctivitis-causing viruses, aiding in accurate diagnostics and outbreak tracking.
4. **Treatment Practices**: Over prescription of antibiotics remains common, despite evidence suggesting that most cases of conjunctivitis (especially viral) resolve without them. Current guidelines advocate antibiotics only for bacterial conjunctivitis associated with contact lens use or sexually transmitted infections like gonorrhea.
5. **Role of Public Health**: Education campaigns and strict public health measures were pivotal in containing outbreaks, particularly in resource-limited settings. Awareness initiatives stressed the importance of avoiding unnecessary antibiotic use and practicing proper hygiene

Conclusion:

The review of conjunctivitis, or pink eye, emphasizes its complex character, which includes bacterial, allergic, irritating, and viral origins. Recent outbreaks in South Asia highlight how congested living circumstances, poor sanitation, and poor hygiene contribute to the spread of disease. Metagenomic sequencing is one example of a diagnostic advancement that offers accurate pathogen identification, facilitating outbreak tracking and focused therapies. Since the majority of viral and moderate bacterial infections heal without the need of antibiotics, the abuse of these drugs continues to be a problem. Hygiene, individualized care, and supportive care are the main components of effective management. In order to prevent outbreaks, public health measures including awareness campaigns and better sanitation are essential. In order to reduce the worldwide burden of this highly contagious illness, it is imperative that these measures be integrated. By addressing these issues, morbidity and transmission will be greatly decreased.

References:

1. Dhrutika J. Barad, Morvi M. Raval, Dr. Chintankumar J. Tank, Dhaval R. Zala (2024) A Review: Pink Eye Outbreak in India, International Journal of Innovative Science and Research Technology, Volume 9, Issue 3, ISSN No:-2456-2165
2. Matthew J. Mahoney, Ruegba Bekibele, Sydney L. Notermann, Thomas G. Reuter and Emily, C. Borman-Shoap, Pediatric Conjunctivitis: A Review of Clinical Manifestations, Diagnosis, and Management, 29 April 2023.
3. Maharashtra cases in September 2023 https://timesofindia.indiatimes.com/city/Mumbai/wav e- of-conjunctivitis-sweeps-across-state-88k-cases-injuly/articleshow/102370069.cms
4. Ullman S, Roussel TJ, Culbertson WW, et al. Nersseria gonorrhoeae Keratoconjunctivitis. Ophthalmology 1987; 94(5): 525-31. http://dx.doi.org/10.1016/S0161-6420(87)33415-3 PMID: 3601368
5. Schachter J, Lum L, Gooding CA, Ostler B. Pneumonitis following inclusion blennorrhea. J Pediatr 1975; 87(5): 779-80. http://dx.doi.org/10.1016/S0022-3476(75)80309-X PMID: 1185349
6. Banerjee S, Nath A, Kumar H, et al. Tackling the unprecedented rise in cases of conjunctivitis in Kolkata and Delhi, India. New Microbes New Infect 2023; 54(Sep): 101171. http://dx.doi.org/10.1016/j.nmni.2023.101171 PMID: 37692290
7. Conjunctivitis: Causes, how this viral eye infection spreads, treatment and prevention tips. Available from: https://www.hindustantimes.com/lifestyle/health/conjunctivitis-causes-how-this-viral-eye-infection-spreads-treatment-and-prevention-tips101690986420948.html
8. Brown, W. Lyle http://hdl.handle.net/1842/29455
9. Isenberg, Sherwin J et al. "A controlled trial of povidone-iodine to treat infectious conjunctivitis in children." American journal of ophthalmology vol. 134,5 (2002): 681-8.
10. Jeng, Bennie H et al. "Epidemiology of ulcerative keratitis in Northern California." Archives of ophthalmology (Chicago, Ill.: 1960) vol. 128,8 (2010): 1022-8.
11. Buznach, Nava et al. "Clinical and bacterial characteristics of acute bacterial conjunctivitis in children in the antibiotic resistance era." The Pediatric infectious disease journal vol. 24,9 (2005): 823-8
12. Shekhawat NS et al. Antibiotic prescription fills for acute conjunctivitis among enrollees in a large United States managed care network. *Ophthalmology.* 2017;124(8):1099-107. [Study on antibiotic overuse in conjunctivitis management

13. Haq A et al. Infective conjunctivitis—its pathogenesis, management, and complications. *Common Eye Infections.* 2013. [Broad review of conjunctivitis pathogenesis and treatment approaches].
14. Ryder EC, Benson S. Conjunctivitis: A comprehensive clinical review. *StatPearls.* 2020. [Clinical resource for conjunctivitis diagnostics and management].