Conjunctivitis is probably one of the commonest causes of red eyes in the outpatient practice. It can affect patients at any age and frequently present as a seasonal epidemic where entire families can be infected. Most of these cases are self-limiting and require minimal treatment.

Common causes of conjunctivitis are:

**Viral infections** eg, adenoviral infections. Enteroviral conjunctivitis can cause severe haemorrhagic conjunctivitis which looks extremely alarming to patients. Herpes simplex virus can cause a recurring conjunctivitis that needs prolonged treatment.

**Bacterial infections.** Most bacterial conjunctivitis do not need antibiotic treatment and can be treated like viral conjunctivitis. Of note, infections caused by *Neisseria gonorrhoea* and *Chlamydia trachomatis* can lead to corneal perforation and blindness if treatment is delayed.

**Allergic causes.** Common allergens include pollen and house-dust mites. Such cases usually have a history of atopy, eg, eczema, allergic rhinitis and asthma, and is more frequently seen in young boys.

**Chemical injury.** These are usually seen in industrial accidents and need immediate copious irrigation to remove the offending agent. It is often difficult to differentiate between the different causes, especially if the history given is vague. A careful eye examination can be useful in looking for salient features to aid in the diagnosis.

<table>
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<tr>
<th>Type of conjunctivitis</th>
<th>History to note</th>
<th>Hallmark symptoms</th>
<th>Hallmark signs</th>
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</table>
| Viral                  | Positive contact history or recent URTI | Eye redness, itchiness, clear watery discharge | Clear watery discharge  
Pre-auricular lymphadenopathy  
Clear corneas  
Vision unimpaired |
| Bacterial              | May or may not have contact history | Eye redness, more discomfort than itchiness  
Purulent discharge | Purulent discharge |
| Allergic               | No contact history  
Past history of similar episodes of itchy, red eyes and discharge | Intense itchiness  
Mucus like/ stringy discharge | Cobblestone papillae  
Limbitis  
Stringy discharge  
Other signs of atopy e.g. dry flaky eye lid skin |
| Chemical               | Clear history of exposure to chemical or noxious agents | Tearing, pain, photophobia | May have corneal epithelial defects/ corneal opacification  
Vision usually impaired |
Treatment and Management

Treatment of conjunctivitis is mainly for symptomatic relief. Topical or oral antibiotics are not necessary. Cool compresses and oral anti-histamines can help relieve itchiness. Lubricants in the form of artificial tears are soothing for the inflamed eye. As both viral and bacterial conjunctivitis can be contagious, the patients should be advised to stay away from crowded areas, practice good hand hygiene and avoid sharing of personal articles like towels.

Bacterial conjunctivitis

Bacterial conjunctivitis can be treated in the same way as viral conjunctivitis as most are self-limiting infections. Conjunctival swabs may yield the growth of commensal organisms or contaminants which do not require treatment. Gonococcal conjunctivitis presents as a hyperacute type of conjunctivitis with copious amount of purulent discharge. The eyelid is often swollen as well. An urgent gram stain smear of conjunctival scrapings will reveal intracellular gram negative diplococci. It is important to refer and treat these cases immediately as a delay in management can lead to corneal perforation and loss of vision. Treatment is with empirical systemic and topical antibiotics, for instance intramuscular or intravenous ceftriaxone, alongside with frequent eye irrigation.

Allergic conjunctivitis

Allergic conjunctivitis can be treated with topical anti-histamines and mast cell stabilisers eg, Gutt olopatadine twice daily. In severe cases, a short course of topical steroids is necessary to control the inflammation. In cases which require frequent courses of steroids, a steroid-sparing agent like Gutt cyclosporine can be used on a long term basis. It is mandatory to counsel parents on the potential side effects of prolonged topical steroids like glaucoma and cataract to ensure compliance to the medication and reduce the possibility of self-medication.

Chemical conjunctivitis

Chemical conjunctivitis requires immediate attention. Copious irrigation with normal saline or Ringer’s lactate should be performed immediately. Litmus paper or other pH indicators can be used to determine neutrality before stopping irrigation. If the vision is unimpaired and the cornea is clear, treatment with intensive artificial tears (eg, hourly Gutt Tears Naturale® Preservative Free) and lubricating ointment (eg, ocular Duratears® or chlorotetracycline) is usually sufficient. In cases with poor vision or cornea involvement, an urgent referral to an ophthalmologist is warranted.

Pitfalls in Dealing with Conjunctivitis

Conjunctivitis is a relatively non-specific symptom. When we label a patient as having “conjunctivitis”, it frequently means that the patient has red eye(s) which we assume is of an infective (usually viral) aetiology and self-limiting. Proof of aetiology is usually not necessary. The issue really starts when the patient continues to have symptoms beyond a week and is not really improving. Prolonged conjunctivitis is a difficult condition to deal with due to the lack of diagnostic aids in a general practice.

Prolonged conjunctivitis can be due to:

- Severe viral conjunctivitis leading to pseudomembrane formation. These accumulate under the eyelids and lead to corneal complications like epithelial defects and abrasions. This can lead to severe eye pain and tearing as well as a reduction in vision. Such cases should be referred for further management.
• **Allergic conjunctivitis** is often mistaken for acute infective conjunctivitis especially during flare-ups. A careful history will reveal intermittent or chronic low grade symptoms in a child with atopy.

• Other causes of infective conjunctivitis like **herpes simplex keratitis**. The hallmark of this infection is reduced corneal sensation along with dendritic ulceration of the cornea. The dendrites, however, can be difficult to appreciate without the use of staining agents like fluorescein. It can also lead to a recurrent form of conjunctivitis. Treatment involves the use of topical acyclovir ointment five times a day in the acute phase.

• **Common masquerades** of conjunctivitis are acute uveitis, dry eyes and blepharoconjunctivitis. Suspect acute uveitis if the patient’s predominated symptom is photophobia. Examination will reveal conjunctival injection concentrated around the limbus of the cornea. In the case of dry eyes, a salient feature is that of intermittent symptoms which are relieved temporarily with eye drops. Itch is not a dominant feature. Blepharoconjunctivitis refers to contiguous inflammation of the eyelids and the conjunctiva. The lid margins are notably red and there may be crusting or matting of the lashes.

• **Contact lens wearers** who present with acute red and teary eyes have to be managed with caution. Examine carefully for any cornea opacity or haziness to rule out an early corneal ulcer. Fluorescein staining can help pick up subtle epithelial defects and small ulcers. If the cornea is clear and vision is unimpaired, it can be managed as for infective conjunctivitis. However, it is prudent to cease contact lens usage and schedule the patient for a follow-up visit in one to two days to prevent missing out on an early corneal ulceration. If the symptoms do not resolve in a few days, a referral to an ophthalmologist is recommended.

Most cases of conjunctivitis can be easily and effectively managed in the general practice. Symptomatic relief is usually sufficient. Topical antibiotic or steroid eye drops are unnecessary in most cases. A referral to an ophthalmologist is recommended in cases with:
- Reduction in visual acuity
- Corneal opacity or haziness
- Prolonged symptoms beyond a week, especially if symptoms are worsening
- Severe eye pain
- Difficulty in performing a thorough eye examination
- Recent eye procedures or surgery performed

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