

Birmingham and Midland Eye Centre

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OPHTHALMIC INFECTIONS**Guidelines for the Management of Microbial Conjunctivitis****1. Bacterial conjunctivitis**

The Cochrane Review found that acute bacterial conjunctivitis is frequently a self-limiting condition and that clinical remission occurs within 2-5 days in 65% of microbiologically confirmed cases treated with placebo therefore the need for treatment should be discussed with the patient when appropriate (e.g. treatment naïve patients). However, the use of antibiotics is associated with significantly improved rates of early clinical remission and early and late microbiological remission (Sheikh A, Hurwitz B. Antibiotics versus placebo for acute bacterial conjunctivitis. Cochrane Database of Systematic Reviews 2006, Issue 2. Art. No.: CD001211. DOI: 10.1002/14651858.CD001211.pub2 [Confirmed as most recent Cochrane report December 2011])

1.1 Swabbing:

- This need not be routinely performed for cases where the diagnosis is clear.
- The exception to this is in the case of pregnant and lactating women (please see below).
- If the patient has had symptoms for more than a week and has not responded to a first-line antibiotic, check and reinforce the frequency of instillation of treatment and take conjunctival swabs for bacteria, virus and chlamydia.
- Avoid local anaesthetics prior to swabbing.
- Do not use fluorescein drops if you intend to swab the eye.

1.2 Prescribing Guidelines:

- First line treatment is with chloramphenicol eye drops 0.5%, two hourly for 48 hours, then four times a day for a further three to five days*. Chloramphenicol eye ointment 1% at night may be prescribed in addition to, or in place of drops.
- If the patient is allergic to chloramphenicol, alternative treatment is fusidic acid eye drops 1% twice a day for five to seven days (although this has a narrow spectrum of antibacterial activity)
- If the patient does not respond to these first-line agents, then a history regarding compliance should be sought, the diagnosis should be re-evaluated and swabs taken (see above). If the condition is still clinically deemed to be bacterial conjunctivitis, the second line agent is fusidic acid eye drops 1%

twice a day (although this has a narrow spectrum of antibacterial activity) In proven cases of *Streptococcus pneumoniae* infection, consider azithromycin eye drops 1.5% (restricted, consultant only) twice a day for three days.

- If the patient is known to be allergic to preservative, then chloramphenicol eye ointment 1% is the first line agent. If drops are required, use preservative free drops, e.g. preservative free chloramphenicol 0.5% (Minims®), frequency and course length as above or preservative free azithromycin 1.5% (restricted, consultant only) twice a day for three days.

**Chloramphenicol eye drops and Chloramphenicol eye ointment are classified as P medicines (available over the counter under the supervision of a pharmacist) for the treatment of acute bacterial conjunctivitis and may be purchased for less than the current prescription charge. Please note that the over the counter drops and ointment may only be used for patients over 2 years of age and at a dose of:*

For the drops - one drop instilled into the infected eye every 2 hours for the first 48 hours and 4 hourly thereafter. To be used during waking hours only.

For the ointment - either at night if eye drops are used during the day, or 3-4 times daily if the eye ointment is used alone.

The course of treatment is 5 days for both.

Therapy can be modified on receipt of bacteriology results.

- Topical treatment should be continued for 24 hours after the symptoms have resolved, which usually means the course is for 5 to 7 days for chloramphenicol or fusidic acid.

1.3 Management of pregnant and lactating women

- Swabbing should be performed from the outset so that treatment decisions are based on complete and relevant information.
- As the condition is self-limiting, there is the option of not treating.
- In pregnancy the evidence suggests that fusidic acid eye drops 1% twice a day is safe. In lactation, consider azithromycin eye drops 1.5% restricted, consultant only twice a day for three days. If other agents are required, refer to table in Topical Antimicrobials in Pregnancy and Lactation.

1.4 Advice to patients

Patients should be advised about general hygiene measures to avoid the spread of infection: frequent hand washing, not sharing flannels and towels.

2. Viral conjunctivitis

2.1 Treatment

- The infection is self limiting, and hence the treatment should be patient education, ocular hygiene, cold compresses and ocular lubricants; anti-viral agents are not effective.
- There is no evidence that the use of topical antibiotics for the secondary prevention of bacterial conjunctivitis is beneficial. However, in severe cases, treatment can be given as per the 'bacterial conjunctivitis' protocol.
- Topical corticosteroids for the treatment of keratitis should be used with caution. Corticosteroids suppress the corneal inflammation but can prolong the course of the disease by delaying viral clearance. Treatment should

therefore be reserved for those with severe symptomatic keratitis (stage 2 or more - focal white sub epithelial infiltrates and anterior stromal infiltrates). Prednisolone 0.1% (unlicensed product) or 0.5% eye drops or fluoromethalone 0.1% eye drops can be prescribed. The frequency of drop instillation should be according to the clinical picture, usually on a twice a day to four times a day basis, with gradual tapering over many weeks. The infiltrates can recur with cessation of treatment, and hence patients must be warned about the potential risks of chronic corticosteroid therapy.

- Patients with corneal involvement can be discussed with the Corneal Fellow. A request for an appointment in the Casualty Corneal Clinic can be made if necessary.

2.2 Hygiene

- For infection control measures, see Section 7.2.3.3
- Viral conjunctivitis is extremely contagious and patients should be made aware of the strict hygiene measures necessary to prevent transmission.

2.3 Infection control measures for suspected Adenovirus Conjunctivitis

2.3.1 In A&E

- i. Waiting time in general A&E should be kept to a minimum.
- ii. Where practicable patients should be segregated whilst waiting further examination.
- iii. Hand washing should be undertaken before and after all patient contact. Alcohol hand rub may be used if hands are not visibly soiled. If hands are visibly soiled, they should be washed with soap and water and dried.
- iv. Wear disposable gloves to examine any patient with suspected conjunctivitis.
- v. The incubation period for Adenovirus 8 is one to two weeks. A conjunctival swab is not always necessary as the diagnosis can usually be made on clinical findings.
- vi. Avoid tonometry unless essential in which case a disposable tonometer should be used. Adequate disinfection of all equipment is mandatory after each examination.

2.3.2 Follow up of Patients

- Adenoviral infections are highly contagious for the first two to three weeks. Hence these patients should not be routinely brought back to the casualty department
- No outpatient with conjunctivitis should be examined on the ophthalmic wards.

3. Chlamydia conjunctivitis

This typically affects sexually active young adults. The eye lesions present about one week following sexual exposure and may be associated with a non-specific urethritis or cervicitis.

3.1 Symptoms

Patients almost invariably have bilateral involvement with a mucopurulent discharge with redness and discomfort.

3.2 Signs

Large opalescent follicles occur in the fornices. Follicles can occur at the limbus and on the bulbar conjunctiva as the disease progresses. A pre-auricular lymphadenopathy is common, but associated fever and pharyngitis is absent. An epithelial keratitis is common; marginal infiltrates and a superior micropannus can occur.

3.3 Management

There is little available evidence on the subject. The following is based upon expert opinion.

3.4 Systemic treatment

This should be prescribed in eye casualty ONLY if there is microbiological confirmation of chlamydial infection.

- Patients with positive chlamydial swabs must be contacted and asked to come back to the eye casualty department for treatment
- Patients will be seen by the nurse practitioner or doctor who will explain the swab results, implications and will issue treatment

Systemic treatment must be given:

Adults

- azithromycin 1 g orally stat is the treatment of choice.
- doxycycline 100 mg orally twice a day for one week or oral ciprofloxacin 750 mg twice a day for one week are second-line agents.
- azithromycin is not licensed for use in pregnancy although it is not known to be harmful. Erythromycin 500 mg orally twice a day for 2 weeks could be used as an alternative.

The patient must be told that if they vomit the stat dose of azithromycin within 3 hours to come back for retreatment.

Children, to prevent chlamydial pneumonia

- Oral erythromycin* for two weeks or
- Oral azithromycin** for 3 days

Adult patients should be referred to the GU clinic (Birmingham - Whittall Street (male patients) 0121 237 5700 / (female patients) 0121 237 5701, Sandwell – Dartmouth Clinic 0121 507 3094 where they will be screened for genital chlamydia and sexual partners will be traced. Leaflets (available in eye casualty) giving details of these clinics will be issued.

3.5 Topical treatment

This can be prescribed in addition to systemic treatment, if indicated. Azithromycin 1.5% eye drops twice a day for three days is recommended.

3.6 Follow up

Follow up is arranged in the primary care clinic with an appointment for 6 weeks from the initiation of treatment.

Exclusion from school/childcare

It is not necessary to exclude a child from school or childcare if they have infective conjunctivitis, unless there is an outbreak of infective conjunctivitis. However, young children may be unwell and "miserable" so should be kept off school until they feel better. In the event of an outbreak of infective conjunctivitis, the school/nursery/childcare centre should seek advice from the Health Protection Unit. Parents may be requested to keep their children away until the infection has cleared. (HPA guidance at http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1194947358374 April 2010; http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1194947319532, November 11).

*Dose for erythromycin: Neonate - 12.5 mg/kg every 6 hours; Child 1 month–2 years 125 mg four times daily; dose doubled in severe infections; Child 2–8 years 250 mg four times daily; dose doubled in severe infections; Child 8–18 years 250–500 mg four times daily; dose doubled in severe infections.

** Dose for azithromycin 10 mg/kg as a single dose daily up to a maximum of 1 g daily (oral liquid formulation contains 40 mg/ml)