College of Registered Nurses of Saskatchewan

Conjunctivitis: Adult & Pediatric

Ears, Eyes, Nose, Throat and Mouth

Clinical Decision Tools for RNs with Additional Authorized Practice [RN(AAP)s]

Effective Date: May 4, 2022

Background

Conjunctivitis is an inflammation of the conjunctiva, the mucous membrane covering the front of the eye (Reinoso, Dunphy, & Porter, 2019). Conjunctival erythema of the ocular and palpebral surfaces is caused by injection and hyperemia of tortuous superficial vessels (Reinoso et al., 2019). Typically caused by a viral or bacterial infection but allergies are also implicated (Reinoso et al., 2019). This condition is usually self-limiting and will typically resolve spontaneously in healthy individuals.

Immediate Consultation Requirements

The RN(AAP) should seek immediate consultation from a physician/NP when any of the following circumstances exist:

- infants less than 2 months of age;
- significant eye pain;
- change in visual acuity or colour vision;
- suspicion of herpes simplex virus (HSV) keratoconjunctivitis, which may present with facial rash or vesicles;
- periorbital/orbital cellulitis;
- no improvement with treatment in 72-96 hours;
- any suspicion of gonorrheal conjunctivitis (usually hyper-acute presentation);
- any suspicion of chlamydial conjunctivitis;
- herpes zoster;
- corneal ulceration;
- irregular, constricted, dilated or fixed pupil(s);
- photophobia;
- headache with nausea or vomiting;
- papilledema;

- extraocular muscle paresis;
- ciliary flush;
- corneal opacity;
- ulcerative keratitis in contact lens users; and/or
- severe foreign body sensation preventing client from keeping their eye(s) open (Interprofessional Advisory Group [IPAG], personal communication, August 28, 2019; Munoz & Flomenberg, 2018; Reinoso et al., 2019; Roat, 2021; Tesini, 2020).

Predisposing and Risk Factors

Predisposing and risk factors for conjunctivitis include:

- contact with another person who has conjunctivitis,
- exposure to a sexually transmitted disease,
- atopic (allergic) conditions,
- overcrowding,
- urban settings,
- multi-use eye drops,
- recent upper respiratory tract infection,
- immunosuppression, and/or
- contact lens use (Reinoso et al., 2019).

Health History and Physical Exam

Subjective Findings

The circumstances of the presenting complaint should be determined. These include:

Viral conjunctivitis may present with the following:

- acute onset of unilateral or bilateral redness,
- watery to mucoid discharge,
- foreign body sensation,
- burning and itching,
- lasts four to seven days; may be infectious for up to two weeks,
- systemic symptoms (e.g., sneezing, runny nose, sore throat),
- recent contact with others with similar symptoms,
- recent history of upper respiratory symptoms,
- starts in one eye and then second eye two to three days later, and/or
- absence of photophobia or pain (Anti-Infective Review Panel, 2019; Ferrer, 2018; Reinoso et al., 2019).

Bacterial conjunctivitis may present with:

- acute unilateral or bilateral redness and purulent discharge (the more discharge the more severe);
- recent contact with others with similar symptoms;
- burning and stinging sensation;
- foreign body sensation;
- sticky eyelids most common with bacterial etiology;
- crusting of eyelids in the morning;
- otitis media is associated;
- usually no blurred vision, photophobia, or coloured halos; and/or
- usually no pain except acute gonococcal conjunctivitis (Anti-Infective Review Panel, 2019; Ferrer, 2018; Reinoso et al., 2019).

Allergic conjunctivitis may present with:

- watery and red eyes without purulent drainage;
- itching as main complaint, worse with rubbing;
- usually bilateral, burning sensation;
- no photophobia or eye pain;
- redness and swelling of the eyelid, and periorbital swelling;
- other allergy signs and symptoms may be present;
- seasonal variations in symptoms;
- symptoms may vary with geography and environment (enquire about mold and water damage in their homes);
- history of seasonal allergies, eczema, asthma, urticarial, and atopic disorders; and/or
- history of chemical exposure (Anti-Infective Review Panel, 2019; Ferrer, 2018; Reinoso et al., 2019).

Objective Findings

The signs and symptoms of infectious (bacterial/viral) conjunctivitis may include:

- vital signs within normal limits;
- intact visual acuity;
- pupils equal, round, reactive to light and accommodation (PERRLA);
- extraocular eye movements within normal limits with no complaints of pain;
- injection of conjunctiva, chemosis if severe (conjunctival injection is prominent in bacterial, moderate in viral);
- pupil anterior chamber depth and intraocular pressure within normal limits;
- unilateral or bilateral diffuse conjunctival redness;
- discharge: purulent in bacterial form; thin and watery, possibly purulent in viral form;
- crusts on lashes;
- red or edematous eyelids; or

- preauricular adenopathy in viral and gonococcal conjunctivitis (Ferrer, 2018; Reinoso et al., 2019).

The signs and symptoms of **allergic** conjunctivitis may include:

- vital signs within normal limits;
- intact visual acuity;
- PERRLA;
- pupil anterior chamber depth and intraocular pressure normal;
- cornea normal and unaffected;
- normal pupil with no mucopurulent discharge; no hyperplasia of palpebral conjunctiva;
- watery eye discharge;
- signs of dermatitis;
- eyelid swelling; and/or
- glassy appearance of the eye (Ferrer, 2018; Reinoso et al., 2019).

Differential Diagnosis

The following should be considered as part of the differential diagnosis:

- blepharitis,
- corneal abrasion,
- uveitis (iritis),
- herpetic keratoconjunctivitis,
- acute glaucoma,
- acute iridocyclitis, or
- keratitis (Ferrer, 2018; Reinoso et al., 2019).

Making the Diagnosis

Factors associated with viral conjunctivitis include itching, burning, and increased tearing (Ferrer, 2018; Reinoso et al., 2019). Factors associated with bacterial conjunctivitis include early morning glued eye; absence of itching; and the absence of a history of conjunctivitis. Factors associated with allergic conjunctivitis include lack of photophobia, eye pain, presence of lymphoid hyperplasia under lids or cobblestone papillae and a bilateral presentation (Reinoso et al., 2019). Conjunctivitis is never painful and there is no change in visual acuity.

Investigations and Diagnostic Tests

A swab for culture and sensitivity/viral studies should be collected if there is no resolution of symptoms after an empiric course of treatment or the client has severe symptoms and the RN(AAP) has a high index of suspicion that the client has a chlamydial or gonococcal infection (Reinoso et al., 2019; Roat, 2021). Examining the eye(s) with fluorescein stain is appropriate if symptoms do not respond to treatment in two to three days or there is a concern about foreign

body, corneal abrasion, or corneal ulceration, which is demonstrated by dye uptake (Reinoso et al., 2019). There is no dye uptake in conjunctivitis.

Management and Interventions

Goals of Treatment

The primary goals of immediate treatment are to identify corneal ulcer, rule out serious infections such as gonorrhea or HSV, and/or prevent transmission (Reinoso et al., 2019).

Non-Pharmacological Interventions

The RN(AAP) should recommend, as appropriate, the following non-pharmacological options for allergic and viral conjunctivitis only (**does not** include HSV keratitis): apply cool, clean compresses to eyes, lids, and lashes as frequently as possible and advise the client to stop rubbing their eyes (Reinoso et al., 2019). The use of artificial tear products may provide some relief (Reinoso et al., 2019).

The RN(AAP) should recommend, as appropriate, the following non-pharmacological options for bacterial conjunctivitis: apply warm, clean compresses to eyes, lids, and lashes. Clean eyelashes frequently with diluted baby shampoo or commercial lid hygiene products (e.g., Lid Care ™).

Pharmacological Interventions

The pharmacological intervention recommended for the treatment of conjunctivitis are in accordance with the *RxFiles: Drug Comparison Charts* (RxFiles Academic Detailing Program, 2021), *Anti-infective Guidelines for Community-acquired Infections* (Anti-infective Review Panel, 2019), *Lid and Conjunctival Pathology* (Reinoso et al. 2019), *Conjunctivitis Preferred Practice Pattern* (Varu, Rhee, Akpek, Amescua, Farid, Garcia-Ferrer, Lin, Musch, Mah, & Dunn, 2019), and *The Burden of Methicillin-Resistant Staphylococcus aureus in the Delivery of Eye Care* (Harford, Greenan, Knowles, Fitzgerald, & Murphy, 2021)

The client should never be prescribed a steroid or steroid-and-antibiotic combination eye drops because the infection may progress or a corneal ulcer may rapidly form and cause perforation.

Bacterial Conjunctivitis

The following chart does not include treatment of gonococcal and chlamydial causes as these require systemic antibiotics.

	Drug	Dose	Route	Frequency	Duration
Pediatric and Adult					
	Erythromycin 0.5% eye ointment	apply thin application to eyelid margin with a cotton-tipped	topical	q.i.d.	5-7 days

		applicator			

	Drug	Dose	Route	Frequency	Duration
Pediatric (≥ 1 month of age) and Adult					
	Polymyxin B/gramicidin eye drops	1 drop	topical	q.i.d.	5-7 days
Pediatric (≥ 1 year of age) and Adult					
	Tobramycin 0.3% eye drops	1-2 drops	topical	q.i.d.	7-10 days
OR	Tobramycin 0.3% eye ointment	1.25 cm	topical	q.i.d.	7-10 days
Pediatric (≥ 1 month of age) and Adult (use if client is MRSA positive)					
	Polymyxin B plus trimethoprim eye drops	1-2 drops	topical	q3-4h while awake	5-7 days

Allergic Conjunctivitis

Second generation oral antihistamines may help relieve itch. Topical antihistamines or mast cell stabilizer drops may be helpful but require consultation with a physician/NP.

	Drug	Dose	Route	Frequency	Duration
Pediatric (≥ 6 months to ≤ 12 months of age)					
	Desloratadine	1 mg	p.o.	once daily at hs	7 days
OR	Cetirizine	2.5 mg	p.o.	once daily at hs	7 days

	Drug	Dose	Route	Frequency	Duration
Pediatric (≥ 12 months to ≤ 6 years of age)					
	Cetirizine	2.5 mg	p.o.	once daily at hs	7 days
OR	Desloratadine	1.25 mg	p.o.	once daily at hs	7 days
Pediatric (> 6 years of age to ≤ 12 years of age)					
	Cetirizine	5-10 mg	p.o.	once daily at hs	7 days
OR	Loratadine	10 mg	p.o.	once daily at hs	7 days
OR	Desloratadine	2.5 mg	p.o.	once daily at hs	7 days
OR	Fexofenadine	30 mg	p.o.	b.i.d.	
Pediatric (> 12 years of age) and Adult					
	Cetirizine	10 mg	p.o.	once daily at hs	7 days
OR	Loratadine	10 mg	p.o.	once daily at hs	7 days
OR	Desloratadine	5 mg	p.o.	once daily at hs	7 days
OR	Fexofenadine	60 mg	p.o.	b.i.d.	7 days

Client and Caregiver Education

The RN(AAP) provides client and caregiver education as follows:

- Counsel about appropriate use of medications (dose, frequency, instillation, compliance, etc.).
- Advise that viral conjunctivitis is self-limiting and will resolve within one or two weeks without medications.
- Advise how to avoid contamination of tube or bottle of medication with infecting organisms.
- Suggest ways to prevent transmission of bacterial and viral conjunctivitis to other household members.
- Instruct about proper hygiene of hands and eyes.

- For bacterial form: the client should be excused from school, daycare, or work for 24-48 hours after treatments are initiated. After two applications of antibiotics the client is no longer infectious.
- For viral form: clients are contagious for a minimum of 48-72 hours and up to two weeks. Clients with viral conjunctivitis may attend daycare/school/work.
- For allergic form: recommend that client avoid going outside when pollen count is high and that protective glasses should be worn to prevent pollen from entering the eyes. Clients should rinse their eyes with saline after being outdoors.
- Educate that putting a patch over the eye is not recommended.
- Educate that they should avoid the use of contact lenses until signs and symptoms resolve.
- Educate that sunglasses may decrease light sensitivity.
- Educate to clean makeup brushes, discard old eye make-up, and avoid using it until symptoms have resolved. (Anti-infective Review Panel, 2019; Ferrer, 2018; Reinoso et al., 2019).

Monitoring and Follow-Up

The RN(AAP) should:

- advise clients with moderate or severe symptoms they should be seen for follow-up at 24 and 48 hours.
- refer clients diagnosed with viral conjunctivitis whose symptoms have not resolved after seven to 10 days.
- immediately refer clients diagnosed with corneal involvement.
- refer clients with bacterial conjunctivitis that has not improved within three to four days of treatment.
- advise all contact lens users with conjunctivitis they should be reassessed after 24 hours. If no improvement, consult a physician/NP.

Complications

The following complications may be associated with conjunctivitis including:

- spread of infection to other eye structures (e.g., subepithelial keratitis);
- conjunctival scarring;
- lacrimal excretory obstruction;
- symblepharon formation (adhesion of eyelid to eye);
- vision loss (e.g., HSV keratitis or gonococcal bacterial infection); and/or
- spread of infection to other household members, or close contacts at daycare, school or work (Reinoso et al., 2019; Anti-infective Review Panel, 2019).

Referral

Refer to a physician/NP if the client presentation is consistent with the *Immediate Consultation Requirements* section, no improvement of conjunctivitis after 24 hours of treatment in contact lens users, and no improvement in other clients after three to four days of treatment (IPAG, personal communication, August 28, 2019).

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