

# PACEYES CONJUNCTIVITIS GUIDELINES

PACIFIC EYE CARE SOCIETY (PACEYES) CLINICAL PRACTICE GUIDELINE



IN ASSOCIATION WITH THE PACIFIC EYE INSTITUTE, SUVA, FIJI



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## 1. INTRODUCTION

### 1.1. Aim

The aim of this guideline is to assist eye doctors and allied eye care providers in the South Pacific region in providing quality treatment for conjunctivitis.

### 1.2. Disease Definition

Any inflammation that primarily affects the conjunctival area is termed conjunctivitis. It can be infective or non-infective and can be described as acute or chronic.

### 1.3. Patient Population Definition

Affects individuals in all age group, social strata and both genders equally. Patients usually presents with a red eye with or without discharge.

### 1.4. Ratings and strength of evidence used in this guideline

**Ratings:** A: Most important, B: Moderately important, C: Relevant but not critical

**Strength of Evidence:** I: Strong, II: Substantial but lacks some of I, III: consensus of expert opinion in absence of evidence for I & II

## 2. BACKGROUND

### 2.1. Burden of disease

Conjunctivitis is the commonest complaint for self-referral to the eye clinic. Conjunctivitis is not frequently associated with blindness; however it affects a significant proportion of society suggesting a significant impact on an economy.

### 2.2. Natural history of disease

The natural history depends on the type of conjunctivitis.

Type	Name	Natural History	Possible Complications
Allergic Conjunctivitis	Seasonal	Seasonal pattern	Eyelid thickening, ptosis, conjunctival scarring, keratitis,
	Vernal/Atopic	Onset in childhood. Chronic course with	

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		acute exacerbations.	keratoconus
	GPC (giant papillary conjunctivitis)	Insidious onset secondary to contact lens wear, exposed suture or prosthesis irritation	Rare
Viral	Adenoviral	Self-limiting with duration 5-14 days	Severe cases may have symblepheron, scarring and subepithelial or corneal infiltrates
	Varicella (herpes) Zoster virus (HZV)	Chicken pox in childhood followed by papillary conjunctivitis in reoccurrences	Conjunctival scarring, cicatricial ectropion, dry eye syndrome
	Molluscum contagiosum	Common in adolescents and young adults. Presence of a lid nodule with ipsilateral follicular conjunctivitis	Epithelial keratitis with pannus formation
Bacterial	Simple (nongonococcal)	Self-limiting, may be more severe in children	Rare
	Gonococcal in Neonates	Manifests 1-7 days postnatal. May appear later if antibiotic drops used at birth. Rapid evolution with profuse purulent discharge.	Keratitis, corneal perforation, septicemia and meningitis
	Gonococcal in Adults	Rapid onset of profuse purulent discharge	Keratitis, corneal perforation, pelvic inflammatory disease, arthritis
	Chlamydial in Neonates	Manifests 5-19 following birth, may be earlier in premature rupture of membranes, prolonged 3-12 months in untreated cases	Conjunctival scarring, keratitis, Nasopharyngeal, genital or pulmonary infection
	Chlamydial in Adults	Subacute onset with	Conjunctival and

		mucopurulent discharge, may be chronic if untreated	corneal scarring, urethritis, salpingitis, endometritis, perihepatitis
	Trachoma	Chronic in children with poor hygiene	Chronicity, corneal scarring, blindness in adult
Mechanical, Irritable, Toxic	Superior limbic keratoconjunctivitis (SLK)	Sub acute onset of symptoms, wax and wane progress	Superior pannus
	Pediculosis palpebrarum (Pthirus pubis)	Chronic conjunctivitis with blepharitis	Chronic blepharitis
	Contact lens wear	Sub acute onset, resolves slower	Superior epitheliopathy
	Floppy eyelid syndrome	Presence of floppy eyelids, chronic adult onset	Punctuate epithelial keratitis, corneal ulceration, keratoconus
	Medication induced	Gradual onset with continued use of medications	Corneal defects, erosions
Immune mediated	Ocular mucus membrane pemphigoid (OMMP)	Onset over age of 60, progressive chronic course	Ocular surface scarring, symblepheron, dry eyes syndrome, eventual vision loss
Neoplastic	Sebaceous gland carcinoma	Occurs from 50-90 years of age, rapid progression	Orbital spread and distant metastasis

### 2.3. Risk factors for disease

The risk of developing conjunctivitis depends on the etiology.

Type	Name	Risk factors/predisposing factors
Allergic Conjunctivitis	Seasonal	Environmental allergens
	Vernal/Atopic	Hot dry environments, environmental allergens, genetics in atopic

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	GPC (giant papillary conjunctivitis)	Contact lens wear, exposed suture on ocular surface
Viral	Adenoviral	Exposure to infected individuals, concurrent upper respiratory chest infection
	Varicella (herpes) Zoster virus (HZV)	Acute chicken pox, exposure to person with acute chicken pox
	Molluscum contagiosum	Adolescent and young adults, immunocompromised status
Bacterial	Simple (nongonococcal)	Exposure to infected persons
	Gonococcal in Neonates	Infected parents, exposure to infected persons
	Gonococcal in Adults	Exposure to infected persons
	Chlamydial in Neonates	Infected parents
	Chlamydial in Adults	Exposure to infected persons
Mechanical, Irritable, Toxic	Superior limbic keratoconjunctivitis (SLK)	Dysthyroid states, female gender
	Pediculosis palpebrarum (Pthirus pubis)	Poor hygiene, sexually transmitted
	Contact lens wear keratoconjunctivitis	Long term use of contact lens
	Floppy eyelid syndrome	Obesity, sleep apnea, upper lid laxity and excursion over lower lid
	Medication induced keratoconjunctivitis	Glaucoma medications, antibiotics, antivirals, others
Immune mediated	Ocular mucus membrane pemphigoid (OMMP)	Unknown
Neoplastic	Sebaceous gland carcinoma	Unknown

## 2.4. Prevention of disease

Early detection and treatment is important in preventing complications. The primary prevention measures depend on the etiology.

### 2.4.1. Infectious Conjunctivitis

- Counsel infected person, their family or colleagues to wash hands and faces frequently and avoid sharing of personal items such as towels

- Infected individuals instructed to wash hands frequently and to avoid spread by fomites
- Avoid infected persons during contagious period

#### 2.4.2. Ophthalmia neonatorum

- Prenatal screening and treatment of infected mothers
- Use of prophylactic eye drops at birth, recommended are 1% Tetracycline or 2.5% Povidone-Iodine

#### 2.4.3. Allergic / Toxic

- Adequate eye protection against some chemicals and toxins

#### 2.4.4. GPC

- Appropriate contact lens care and frequent lens replacement

#### 2.4.5. Universal Procedures

- Ophthalmic staff to adhere to strict hand washing between each patient
- Regular disinfecting of examination surfaces and instruments in the eye clinic
- Adequate sterilization of tonometer head with a 5 minute soak in 70% ethyl ethanol.

### 3. DIAGNOSIS

#### 3.1. History

- 3.1.1 Symptoms and signs (A:III)
- 3.1.2 Duration of symptoms (A:III)
- 3.1.3 Exacerbating factors (A:III)
- 3.1.4 Unilateral or bilateral (A:III)
- 3.1.5 Character of discharge (A:III)
- 3.1.6 Recent exposure to an infected individual (A:III)
- 3.1.7 Trauma (mechanical, chemical, ultraviolet) (A:III)
- 3.1.8 Contact lens wear details (A:III)
- 3.1.9 Symptoms and signs relating to systemic disease (genitourinary, pulmonary, skin) (A:III)
- 3.1.10 Allergy, asthma, eczema (A:III)

- 3.1.11 Use of topical or systemic medications (A:III)
- 3.1.12 Previous ocular history (B:III)
- 3.1.13 Compromised immune status (B:III)
- 3.1.14 Current or prior systemic disease (B:III)
- 3.1.15 Social history (habits, travel, sexual) (B:III)

## 3.2. Examination

3.2.1. Visual acuity (A:III)

3.2.2. External examination

3.2.2.1. Regional lymphadenopathy (A:III)

3.2.2.2. Skin (A:III)

3.2.2.3. Abnormality of eyelids and adnexia (A:III)

3.2.2.4. Conjunctiva (pattern, subconj hemorrhage, chemosis, cicatricial change, masses) (A:III)

3.2.3. Slit lamp biomicroscopy

3.2.3.1. Eyelid margins (A:III)

3.2.3.2. Eyelashes (A:III)

3.2.3.3. Lacrimal puncta and canaliculae (B:III)

3.2.3.4. Tarsal and forniceal conjunctive (A:III)

3.2.3.4.1. Presence and size of papillae and follicles

3.2.3.4.2. Cicatricial changes, symblepheron

3.2.3.4.3. Membranes and pseudomembranes

3.2.3.4.4. Ulceration, hemorrhages, masses

3.2.3.4.5. Foreign body

3.2.3.4.6. Lid laxity

3.2.4. Bulbar conjunctiva and limbus (A:III)

3.2.5. Cornea (A:III)

3.2.5.1. Epithelial defects

3.2.5.2. Punctuate keratopathy

3.2.5.3. Dendritic keratitis

3.2.5.4. Filaments, ulceration

3.2.5.5. Infiltration, phlictenules

3.2.5.6. Vascularization, keratic precipitates

3.2.6. Anterior chamber (A:III)

3.2.7. Dye staining pattern on conjunctiva and cornea (A:III)

## 3.3. Investigations

Most conjunctivitis diagnosis can be made from history and examination alone. Additional tests are helpful in some cases; however the presence and reliability of these tests vary between the different clinical settings in the region. Tests that are rarely needed are:

- Cultures (A:I)
- Smears and cytology (A:II)
- Biopsy in suspect of malignancy (A:II)
- Thyroid test in SLK

## 4. MANAGEMENT

Judicious use of medication is required. Dispensing antibiotic eye drops indiscriminately and the use of steroid eye drops in conjunctivitis must be avoided if not specifically recommended. Outlined are the specific approaches for different types of conjunctivitis.

### 4.1. Seasonal Allergic Conjunctivitis

Non-medical – Avoid / modify sensitizing environments

Medical – Use antihistamines or mast cell stabilizers (A:I)

Olopatidine (Patanol) guttae, 1 drop 6 hourly, 1-2 weeks

Naphazolin/pheniramine (Naphcon) guttae, 1 drop 6 hourly, 1-2 weeks

Other antihistamine, mast cell stabilizers, anti-allergy eye medications

### 4.2. Vernal/ atopic Conjunctivitis

Non-medical - Avoid / modify sensitizing environments

Medical – Use minimal effective Corticosteroid drops (A:III)

Fluorometholone/ Betamethasone/ Dexamethasone, 1 drop 4-12 hourly, 1-2 weeks

NB: Explain possible complications of steroid drops; check IOP before and after treatment; ensure there is no concurrent conjunctival/corneal infection

### 4.3. Giant Papillary Conjunctivitis

Non-Medical – Modify / Removing sensitizing factor

Medical – Short course of Corticosteroids according to response (A:III)

NB: Explain possible complications of steroid drops; check IOP before and after treatment; ensure there is no concurrent conjunctival/corneal infection

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#### **4.4. Superior limbic keratoconjunctivitis**

Non-medical – Educate patient on Chronicity of disease; thyroid function test

Medical - Lubricants, Mast cell stabilizers (Patanol), 1 drop 6-8 hourly; soft contact lenses; temporary punctal occlusion

Filamentary keratopathy – Acetylcystein 10%

#### **4.5. Contact lens-related keratoconjunctivitis**

Non-medical – Discontinue contact lens use for 2 weeks; advise for spectacle use as an alternative

Medical – Mild corticosteroids, 1 drop 6 hourly for 2 weeks, add broad spectrum antibiotics such as Chloramphenicol 1 drop 6 hourly with steroids if infection present

#### **4.6. Floppy eye lid syndrome**

Non-medical – Taping lid shut before sleeping; wear protective shield for sleeping; refer for review of sleep apnea

Medical – Topical lubricants

Surgical – Full thickness upper lid shortening to prevent eversion of upper lid

#### **4.7. Pediculosis Palpebrarum**

Non-medical – Patients should be advised on possibility of concomitant disease; refer appropriately; may indicate sexual abuse in children; anti-lice lotion/shampoo use for patients and contacts, avoid use on ocular infestations

Medical – Bland ophthalmic ointment (Chloramphenicol/tetracycline) b.d or t.d.s to allow easier removal of nits (eggs) and adult lice

Mechanical Removal with forceps or by epilation

#### **4.8. Medication induced keratoconjunctivitis**

Non-medical – Immediate discontinuation of responsible agent

Medical – Corticosteroids in presence of severe inflammation

NB: Inflammation usually settles 2 weeks after discontinuation of responsible agent

#### **4.9. Adenoviral conjunctivitis**

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Non-medical – Appropriate measures to reduce risk of transmission as it is highly contagious; cold compresses may help

Medical – There is no antiviral medication for adenovirus. Available antivirals are not effective in adenoviral conjunctivitis. Corticosteroids, antibiotics, artificial tears, topical antihistamines may be used when needed. Fluorometholone (FML) has poor intraocular penetration and is suitable for ocular surface inflammation. It has less effect on IOP

NB: Explain possible complications of steroid drops; check IOP before and after treatment; adenoviral conjunctivitis may take 2-3 weeks for full resolution

#### **4.10. Varicella zoster conjunctivitis**

Medical – Antivirals are of no benefit, except in immunocompromised patients. Antibiotic eye drops can be given according to severity, to treat secondary bacterial infections.

NB: Check for sequelae as dry eyes, neurotrophic keratitis and corneal anesthesia

#### **4.11. Herpes Simplex Virus (HSV) conjunctivitis**

Medical - Topical and oral antiviral recommended for prevention of corneal infection. Topical Acyclovir, 1 drop every 4 hours, Oral Acyclovir 200mg – 400mg every 4 hours.

NB: Use of Acyclovir for more than 2 weeks can be toxic. Topical steroid should be avoided. HSV in neonates should be referred to pediatrician.

#### **4.12. Molluscum contagiosum**

No specific treatment advised. May remove lesion.

#### **4.13. Bacterial conjunctivitis**

Non-medical – Symptomatic treatment, as condition is self-limiting.

Medical – Broad spectrum antibiotic may shorten duration of condition.

Topical Chloramphenicol 1 drop 2 – 6 hourly or other empirical drug may be used according to severity.

NB: Culture done in severe cases or if Gonococcal is suspected, frequent review until condition is stable (A:I)

#### **4.14. Chlamydial and Gonococcal conjunctivitis**

Medical – Treatment is orally. Topical empirical antibiotic can be used 2 – 6 hourly until condition improves.

Oral treatment given as:

Chlamydia in Children – neonates and children <45kg, Erythromycin 50mg/kg/day in 4 divided doses x 14 days; children >45kg but <8 years, Azithromycin 1 g single dose; children >8 years, Azithromycin 1 g single dose or Doxycycline 100mg b.d. x 14 days

Chlamydia in Adults - Azithromycin 1 g single dose or Doxycycline 100mg b.d. x 14 days

Gonococcal in Children – neonates, Ceftriaxone 25-50mg/kg IV or IMI, not to exceed 125mg; children <45kg, Ceftriaxone 125mg IMI single dose, or Spectinomycin 40mg/kg, max 2g, for patients allergic to cephalosporin; children >45kg, same as adult dosage.

Gonococcal in Adults – Ceftriaxone 1 g IMI single dose or Cefixime 400mg oral single dose. Spectinomycin 2 g IM single dose in patients allergic to cephalosporin

#### **4.15. Trachoma**

Non-medical – Facial hygiene, improve sanitation.

Medical – Tetracycline ointment application 6 hourly x 2 weeks; Azithromycin 20mg/kg up to 1g single dose

#### **4.16. Ocular mucus membrane pemphigoid (OMMP)conjunctivitis**

Non-medical – Discontinue any medications causing OMMP

Medical – Corticosteroids (topical or oral) to control inflammation; systemic immunosuppressant may be needed to control severe inflammation and prevent progression of scarring, seek local physicians' advice on immunosuppressive treatment. Treat associated dry eyes, trichiasis, distichiasis and entropion.

#### **4.17. Other types of conjunctivitis**

Other types refer to chemical, mechanical and conjunctivitis associated with systemic diseases. The underlying cause of conjunctivitis needs to be treated and symptomatic treatment of the eye recommended.

**NB: In a setting where the primary eye care provider is not an ophthalmologist, urgent referral to a specialist is required when one of the following is noted**

- Visual loss
- Moderate or severe pain
- Severe, purulent discharge
- Corneal involvement
- Conjunctival scarring
- Treatment failure
- Recurrent episodes
- History of HSV disease
- History of immune compromise

Counseling is imperative in minimizing spread of contagious conjunctivitis.

## **References**

- 1) American Academy of Ophthalmology. **Conjunctivitis**, Preferred Practice Pattern 2008 review: ONE™ Network. (<http://one.aao.org/CE/PracticeGuidelines/PPP.aspx>)
- 2) International Council of Ophthalmologist. **ICO international clinical guideline, Conjunctivitis**. Amended May 24, 2010. (<http://www.icoph.org/resources>)

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- 3) Ministry of Health and Social Welfare, Zanzibar, Tanzania. **Standard Treatment Guidelines**, 6.0 Eye disease Condition

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