Red eye conditions

From the 2019 Optometry Australia Anterior Eye Clinical Practice Guide

Optometry AUSTRALIA

	Common symptoms	Clinical presentations	Risk factors	Differential diagnoses	Triggers for referral & appropriate timing	Pharmacological management	Review
Bacterial Keratitis	• Redness • Pain • Photophobia • Reduced vision • Lid Swelling • Mucopurulent discharge • "White spot on eye"	• Irregular focal lesion, may be > 1 mm in size • Epithelial defect • Discharge • Anterior chamber reaction – cells & flare • Lid swelling • Infiltrate • Posterior synechiae • Conjunctival injection	**Age** • 15-64 years (Trauma and Contact Lenses) • > 60 years – Previous ocular surgery **External** • Contact lenses (e.g. extended wear, poor hygiene, inadequate disinfection, sharing of lenses, use of tap water) • Trauma • Previous ocular surgery • Immunosuppression • Substance abuse **Internal** • Tear-film deficiencies • Viral keratitis • Recurrent corneal erosion **Systemic conditions** • Diabetes • Atopic dermatitis • Blepharoconjunctivitis • Gonococcal infection • Vitamin A deficiency	• Sterile peripheral infiltrate • Marginal keratitis • Fungal keratitis • Herpes simplex keratitis • Exposure keratopathy • Neurotrophic • Acanthamoeba keratitis • Shield ulcer • Dellen • Phlyctenular keratitis	**Same day/within 24 hours** • Larger (> 2 mm), more central or deeper lesions – risk of scarring and/ or perforation • Consider referral for culture/corneal scrape to identify causative organism • Non-responding cases: be aware of bacterial resistance to antibiotic treatment • Consider non-bacterial causes **Within 72 hours** • Cases that do not respond to initial treatment or slow/inadequate healing	**Topical ciprofloxacin or ofloxacin** **Loading dose:** Q1h for 2 days then (if good response) QID until completely resolved. **Considerations:** • Fluoroquinolones (ciprofloxacin and ofloxacin) cover both gram positive and gram negative pathogens • Ciprofloxacin has enhanced activity towards gram positive – may be preferred in hot climates in contact lens microbial keratitis • Ofloxacin in cooler climates for Staph species • Atropine – (prevent ciliary spasm) if significant pain and oral analgesia insufficient. • Corticosteroids – limit scarring during healing • Steroid treatment should be introduced only after 2-3 days of progressive improvement of the ulcer	**Daily until ulcer shows improvement. Weekly until complete resolution.** Clinical discretion should be applied. Review schedule should be considered on a case by case basis. Factors to consider include: • Severity of infection • Risk of side effects • Reliability of patients to comply with instructions
Herpes Simplex Keratitis	• Redness • Pain/Discomfort • Photophobia • Reduced vision • Lid swelling • Mild watery discharge • Reduced corneal sensitivity	• Epithelial disease (dendritic or geographic ulcers) • Stromal disease • Neurotrophic keratitis • Endotheliitis • Conjunctivitis (mild) • Skin lesions • Anterior chamber reaction • Conjunctival injection • Preauricular node	• Long-term corticosteroid inhalers • Long-term corticosteroid creams • Asthmatic patients • Cardiovascular disease • Immunosuppressed patients • Atopic patients • Multiple previous episodes	• Acanthamoeba keratitis • Herpes Zoster Ophthalmicus • Recurrent corneal erosion • Healing abrasion	**Same day/within 24 hours** • Stromal and endothelial involvement • Bilateral cases • Large geographic ulcers **Within a week** • Cases that do not respond to initial treatment	**Epithelial and Geographic** 3% Acyclovir* ointment - 5 times/day for 7 days then 3 times/day for next 7 days. (*Can be toxic to ocular surface. Cease 1-2 days after resolution and consider non-preserved lubricants to help with ocular surface toxicity) Consider cycloplegic agent with anterior chamber reaction **Stromal Keratitis** Topical corticosteroids with oral prophylactic antivirals **Considerations** Topical steroids will worsen herpes simples keratitis HSK epithelial disease Oral antivirals may be indicated in patients with many recurrences, e.g. • Valacyclovir 500mg 1xday • Acyclovir 400mg 2x/day Consider referral for medical opinion	**1-2 days until HSK is improving. Weekly until complete resolution.** Clinical discretion should be applied. Review schedule should be considered on a case by case basis. Factors to consider include: • Severity of infection • Risk of side effects • Reliability of patients to comply with instructions
Acute Anterior Uveitis	• Redness • Pain • Photophobia • Reduced vision • Copious watery discharge	• Circumlimbal flush • Anterior chamber reaction – cells and flare • Miotic pupil • Keratic precipitate • Hypopyon • Abnormal IOP • Corneal oedema • Posterior synechia	• HLA-B27 positive • Rheumatoid conditions • Inflammatory bowel conditions • Trauma • Keratitis • Idiopathic • Ulcerative colitis • Crohn's disease • Syphilis • Behcet's disease • Sarcoidosis • Tuberculosis • Multiple Sclerosis	• Glaucoma (acute angle closure) • Fuchs Heterochromic iridocyclitis • Endophthalmitis • Posner-Schlossman Syndrome • Lens induced uveitis • Intraocular foreign body	**Same day/within 24 hours** • Severe cases e.g. significant posterior synechiae, poor view of posterior pole, atypical inflammation • Hypopyon • Bilateral • Posterior segment involvement • Recent surgery • Presence of drainage bleb • IOP > 30 mmHg **Within 72 hours** • Cases that do not respond to initial treatment • Refer to medical practitioners (GP, ophthalmologist) following 2nd episode	Topical Steroids with good intraocular penetration: Predforte or Maxidex. **May require loading dose:** • Q1h waking hours (consider overnight based on severity) for 2 days, then (if improvement) Q2h for 2 days, then (if improving) • Qid for 1 week, then • Tid for 1 week, then • Bid for 1 week, then • Qd for 1 week, then stop. Monitor IOP while treating with topical steroids to identify steroid responders Atropine (bid – tid) until anterior chamber reaction under control.	**Review on first or second day after commencing treatment.** Clinical discretion should be applied. Review schedule should be considered on a case by case basis. Factors to consider include: • Severity of inflammation • Risk of side effects • Reliability of patients to comply with instructions