## Red eye conditions

From the 2019 Optometry Australia Anterior Eye Clinical Practice Guide

### Bacterial Keratitis

<table>
<thead>
<tr>
<th>Common symptoms</th>
<th>Clinical presentations</th>
<th>Risk factors</th>
<th>Differential diagnoses</th>
<th>Triggers for referral &amp; appropriate timing</th>
<th>Pharmacological management</th>
<th>Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redness</td>
<td>Irregular focal lesion, may be &gt;1 mm in size</td>
<td>Age 16-64 years (Trauma and Contact Lenses)</td>
<td>Sterile peripheral infiltrate</td>
<td>Same day/within 24 hours</td>
<td>Topical ciprofloxacin or ofloxacin</td>
<td>Daily until ulcer shows improvement.</td>
</tr>
<tr>
<td>Pain</td>
<td>Epithelial defect</td>
<td>&gt; 60 years – Previous ocular surgery</td>
<td>Marginal keratitis</td>
<td>Within a week</td>
<td>Loading dose: QID for 2 days then (if good response) QID until completely resolved.</td>
<td>Weekly until complete resolution.</td>
</tr>
<tr>
<td>Photophobia</td>
<td>Discharge</td>
<td>External</td>
<td>Herpes simplex keratitis</td>
<td>Consider referral for culture/corneal scrape to identify causative organism</td>
<td>Considerations:</td>
<td>Clinical discretion should be applied. Review schedule should be considered on a case by case basis. Factors to consider include:</td>
</tr>
<tr>
<td>Reduced vision</td>
<td>Anterior chamber reaction</td>
<td></td>
<td>Exposure keratopathy</td>
<td>• Fluoroquinolones (ciprofloxacin and ofloxacin) cover both gram positive and gram negative pathogens</td>
<td>• Fever</td>
<td>Severity of infection</td>
</tr>
<tr>
<td>Lid Swelling</td>
<td>- cells &amp; flare</td>
<td></td>
<td>Neurotrophic</td>
<td>• Ciprofloxacin has enhanced activity towards gram positive – may be preferred in hot climates in contact lens microbial keratitis</td>
<td>• Risk of side effects</td>
<td>Risk of side effects</td>
</tr>
<tr>
<td>Mucopurulent discharge</td>
<td>Lid swelling</td>
<td></td>
<td>Acanthamoeba keratitis</td>
<td>• Ofloxacin in cooler climates for Staph species</td>
<td>• Reliability of patients to comply with instructions</td>
<td>Reliability of patients to comply with instructions</td>
</tr>
<tr>
<td>“White spot on eye”</td>
<td>Conjunctival injection</td>
<td></td>
<td>Shield ulcer</td>
<td>Consider referral for culture/corneal scrape to identify causative organism</td>
<td>Within 72 hours</td>
<td>Consideration:</td>
</tr>
</tbody>
</table>

### Herpes Simplex Keratitis

<table>
<thead>
<tr>
<th>Common symptoms</th>
<th>Clinical presentations</th>
<th>Risk factors</th>
<th>Differential diagnoses</th>
<th>Triggers for referral &amp; appropriate timing</th>
<th>Pharmacological management</th>
<th>Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redness</td>
<td>Epithelial disease (dendritic or geographic ulcers)</td>
<td></td>
<td>Acanthamoeba keratitis</td>
<td>Same day/within 24 hours</td>
<td>Topical ciprofloxacin or ofloxacin</td>
<td>1-2 days until HSK is improving.</td>
</tr>
<tr>
<td>Pain</td>
<td>Stromal disease</td>
<td></td>
<td>Herpes Zoster Ophthalmicus</td>
<td>Within 72 hours</td>
<td>Loading dose: QID for 2 days then (if good response) QID until completely resolved.</td>
<td>Weekly until complete resolution.</td>
</tr>
<tr>
<td>Ophthalmia</td>
<td>Neurotrophic keratitis</td>
<td></td>
<td>Recurrent corneal erosion</td>
<td>Consideration:</td>
<td>Considerations:</td>
<td>Clinical discretion should be applied. Review schedule should be considered on a case by case basis. Factors to consider include:</td>
</tr>
<tr>
<td>Keratitis</td>
<td>Endothelitis</td>
<td></td>
<td>Healing abrasion</td>
<td>• Fluoroquinolones (ciprofloxacin and ofloxacin) cover both gram positive and gram negative pathogens</td>
<td>• Fever</td>
<td>Severity of infection</td>
</tr>
<tr>
<td>Conjunctivitis</td>
<td>Conjunctivitis (mild)</td>
<td></td>
<td></td>
<td>• Ciprofloxacin has enhanced activity towards gram positive – may be preferred in hot climates in contact lens microbial keratitis</td>
<td>• Risk of side effects</td>
<td>Risk of side effects</td>
</tr>
<tr>
<td>Skin lesions</td>
<td></td>
<td></td>
<td></td>
<td>• Ofloxacin in cooler climates for Staph species</td>
<td>• Reliability of patients to comply with instructions</td>
<td>Reliability of patients to comply with instructions</td>
</tr>
<tr>
<td>Anterior chamber reaction</td>
<td></td>
<td></td>
<td>Recurrent corneal erosion</td>
<td>Consider referral for culture/corneal scrape to identify causative organism</td>
<td>Within 72 hours</td>
<td>Consideration:</td>
</tr>
<tr>
<td>Conjunctival injection</td>
<td>Preauricular node</td>
<td></td>
<td>Herpes Zoster Ophthalmicus</td>
<td></td>
<td>Considerations:</td>
<td></td>
</tr>
</tbody>
</table>

### Acute Anterior Uveitis

<table>
<thead>
<tr>
<th>Common symptoms</th>
<th>Clinical presentations</th>
<th>Risk factors</th>
<th>Differential diagnoses</th>
<th>Triggers for referral &amp; appropriate timing</th>
<th>Pharmacological management</th>
<th>Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redness</td>
<td>Circumlimbal flush</td>
<td></td>
<td>Glaucoma (acute angle closure)</td>
<td>Same day/within 24 hours</td>
<td>Topical Steroids with good intraocular penetration:</td>
<td>Review on first or second day after commencing treatment.</td>
</tr>
<tr>
<td>Pain</td>
<td>anterior chamber reaction – cells and flare</td>
<td></td>
<td>Fuchs</td>
<td>Predforte or Maxidex.</td>
<td>May require loading dose:</td>
<td>Clinical discretion should be applied. Review schedule should be considered on a case by case basis. Factors to consider include:</td>
</tr>
<tr>
<td>Photophobia</td>
<td>Keratic precipitate</td>
<td></td>
<td>HLA-B27 positive</td>
<td>QID waking hours (consider overnight based on severity) for 2 days, then (if improvement) QID for 2 days, then (if improving)</td>
<td></td>
<td>Severity of infection</td>
</tr>
<tr>
<td>Reduced vision</td>
<td></td>
<td></td>
<td>Rheumatoid conditions</td>
<td>QID for 1 week, then</td>
<td>• Risk of side effects</td>
<td></td>
</tr>
<tr>
<td>Copious watery discharge</td>
<td></td>
<td></td>
<td>Inflammatory bowel conditions</td>
<td>Tid for 1 week, then</td>
<td></td>
<td>Reliability of patients to comply with instructions</td>
</tr>
<tr>
<td></td>
<td>Trauma</td>
<td></td>
<td>Trauma</td>
<td>Bilid for 1 week, then</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Keratitis</td>
<td></td>
<td>Keratitis</td>
<td>Tid for 1 week, then</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Idiopathic</td>
<td></td>
<td>Idiopathic</td>
<td>Qd for 1 week, then</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ulcerative colitis</td>
<td></td>
<td>Ulcerative colitis</td>
<td>Monitor IOP while treating with topical steroids to identify steroid responders</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crohn’s disease</td>
<td></td>
<td>Crohn’s disease</td>
<td>Atropine (bid – tid) until anterior chamber reaction under control.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Syphilis</td>
<td></td>
<td>Syphilis</td>
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<tr>
<td></td>
<td>Behcet’s disease</td>
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<tr>
<td></td>
<td>Sarcoidosis</td>
<td></td>
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<tr>
<td></td>
<td>Tuberculosis</td>
<td></td>
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<tr>
<td></td>
<td>Multiple Sclerosis</td>
<td></td>
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<td></td>
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### Keratitis

- Copious watery
- Reduced vision
- Lid swelling
- Mucopurulent discharge
- “White spot on eye”
- Photophobia
- Pain
- Conjunctival injection
- Irregular focal lesion, may be >1 mm in size
- Epithelial defect
- Discharge
- Anterior chamber reaction – cells & flare
- Lid swelling
- Infiltrate
- Posterior synechiae
- Conjunctival injection
- Posterior synechiae
- Infiltrate
- Abnormal IOP
- Corneal oedema
- Keratic precipitate
- Posterior segment involvement
- Recent surgery
- Presence of drainage bleb
- IOP > 30 mmHg
- Inflammatory bowel disease
- HLA-B27 positive
- Keratitis
- Trauma
- Conjunctivitis (mild)
- Endothelitis
- Asthmatic patients
- Cardiovascular disease
- Immunosuppressed patients
- Atopic patients
- Multiple previous episodes
- Sterile peripheral infiltrate
- Marginal keratitis
- Fungal keratitis
- Anterior chamber reaction – cells and flare
- Circumlimbal flush
- 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
- Intracocular foreign body

### Keratitis

- Posterior synechiae
- Corneal oedema
- Abnormal IOP
- Corneal oedema
- Keratic precipitate
- Posterior segment involvement
- Recent surgery
- Presence of drainage bleb
- IOP > 30 mmHg
- Inflammatory bowel disease
- HLA-B27 positive
- Keratitis
- Trauma
- Conjunctivitis (mild)
- Endothelitis
- Asthmatic patients
- Cardiovascular disease
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