

# Surgical Antibiotic Prophylaxis Guidelines

## Ophthalmology

### Pre-Operative Considerations

**Consider individual risk factors for every patient** – need for prophylaxis, drug choice or dose may alter (e.g. immune suppression, presence of prostheses, allergies, obesity, malnutrition, diabetes, infection at another site, available pathology or malignancy).

**Pre-existing infections (known or suspected)** – if present, use appropriate treatment regimen instead of prophylactic regimen for procedure. Doses should be scheduled to allow for re-dosing just prior to skin incision.

### Practice Points

#### Drug administration

- > IV bolus – should be timed  $\leq$  60 minutes before skin incision (optimal 30 minutes) [1]. Administration after skin incision or  $>$  60 minutes before incision reduces effectiveness [2].
- > IV infusion – should be timed to end  $\leq$  30 minutes before skin incision (e.g. see clindamycin below)

**MRSA risk** (defined as history of MRSA colonisation or infection, **OR** inpatient of metropolitan or other high risk hospital for more than the last five days)

- > See recommended prophylaxis

#### Clindamycin administration

- > Give clindamycin 600mg (child: 10mg/kg up to 450mg) single dose IV infusion at a rate  $\leq$  30mg/minute. The IV infusion should be timed to end  $\leq$  30 minutes before skin incision.

#### Obese patients

- > Consider increased dose of cefazolin (3g) if patient is obese ( $>$ 120kg) .

### Recommended Prophylaxis

	Recommended Prophylaxis	*High risk penicillin/cephalosporin allergy
<b>All procedures</b>	<u>Pre-operatively:</u> Immediately prior to surgical incision, apply sterile povidone-iodine 5% swab to conjunctival cul de sac, lid margins and periorbital skin and dry at 2 minutes. In patients with a povidone iodine (Betadine®) allergy, use a sterile product containing chlorhexidine acetate 0.05% for 5 minutes [3].	
<b>Extra-ocular procedures</b>		
<b>Clean procedures</b>	There is no strong evidence that IV prophylactic antibiotics improve outcomes for clean extra-ocular procedures in otherwise healthy individuals. If required, use:	
<ul style="list-style-type: none"> <li>&gt; conjunctival procedures</li> <li>&gt; rectus / oblique muscle procedures</li> <li>&gt; entropion / ectropion repair</li> </ul>	<b>cefazolin 2g IV</b> (child: 30mg/kg up to 2g) <u>High risk of MRSA infection:</u> <b>REPLACE</b> cefazolin with clindamycin 600mg IV infusion	<b>clindamycin 600mg IV</b> infusion (child: 10mg/kg up to 450mg)
<b>Procedures where infection may be present</b> (e.g. Dacryocystorhinostomy)	No strong evidence for IV prophylaxis (as above). <b>Chloramphenicol 0.5%</b> eye drops four times a day post-operatively for 7 days. [4]	
<b>Intra-ocular procedures</b>		
<b>Anterior procedures</b>	<b>cefazolin 1mg/0.1ml</b> intracameral injection at the end of the procedure PLUS <b>chloramphenicol 0.5%</b> eye drops four times a day post-operatively for one week OR, if chloramphenicol contraindicated then: <b>tobramycin 0.3%</b> eye drops four times a day post-operatively for one week	
<ul style="list-style-type: none"> <li>&gt; phacoemulsification / lens implant</li> <li>&gt; keratoplasty</li> <li>&gt; trabeculectomy / tube implant</li> <li>&gt; corneal graft</li> </ul>	<b>Seek ID advice:</b> Intracameral moxifloxacin 0.5% (available by SAS only) may be considered as an alternative to ceftazidime / cephazolin based on evidence presented in a meta-analysis of non-randomised studies [5, 6].	
<b>Vitreous procedures</b>	<b>ceftazidime 2.25 mg/0.1 mL</b> subconjunctival injection at the end of the procedure PLUS <b>chloramphenicol 0.5%</b> eye drops four times a day post-operatively for one week OR if chloramphenicol contraindicated then: <b>tobramycin 0.3%</b> eye drops four times a day post-operatively for one week	
<ul style="list-style-type: none"> <li>&gt; retinal detachment repair</li> <li>&gt; scleral buckle</li> <li>&gt; cryotherapy</li> </ul>	Intracameral vancomycin is not recommended due to the risk of haemorrhagic occlusive retinal vasculitis [7].	

## Post-Operative Care

There is a lack of strong evidence to support the use of post-operative topical antibiotics [4]. Prolonged treatment with antibiotic ointment or drops is not indicated unless there is confirmed or suspected infection. For patients who are treated with extended periods of topical steroids or who have been treated with systemic steroids preoperatively, immunological defenses may be reduced and the risk of infection may be increased [9]. If post-operative topical antibiotics are considered necessary due to higher risk of infection, chloramphenicol 0.5% eyedrops can be used four times daily for 7 days [4]. Tobramycin eyedrops should only be used in patients hypersensitive to chloramphenicol due to an increased risk of resistance [4].

If infection is suspected, consider modification of antibiotic regimen according to clinical condition and microbiology results.

## Definitions / Acronyms

<b>DRESS</b>	Drug rash with eosinophilia and systemic symptoms
<b>IV</b>	Intravenous
<b>MRSA</b>	Methicillin-resistant <i>Staphylococcus aureus</i>
<b>SJS / TEN</b>	Stevens-Johnson syndrome / Toxic epidermal necrolysis

\* High Risk penicillin/cephalosporin allergy: History suggestive of high risk (eg. anaphylaxis, angioedema, bronchospasm, urticaria, DRESS/SJS/TEN)

## References

1. Bratzler, D., et al., Clinical practice guidelines for antimicrobial prophylaxis in surgery. *Am J Health Syst Pharm*, 2013. 70(Feb 1): p. 195 -283.
2. Weber, W.P.M.D., et al., The Timing of Surgical Antimicrobial Prophylaxis. *Annals of Surgery*, 2008. 247(6): p. 918-926.
3. Merani, R., et al., Aqueous chlorhexidine for intravitreal injection antisepsis: a case series and review of the literature *Ophthalmology* 2016. 123: p. 2588-94.
4. Therapeutic Guidelines: Antibiotic, Surgical prophylaxis for ophthalmic surgery. 2014: Melbourne [Available at: [www.tg.org.au](http://www.tg.org.au)].
5. Kessel, L., et al., Antibiotic prevention of postcataract endophthalmitis: a systematic review and meta-analysis. *Acta Ophthalmologica*, 2015. 93(4): p. 303-317.
6. Zhou, A.X., et al., Safety of undiluted intracameral moxifloxacin without postoperative topical antibiotics in cataract surgery. *International Ophthalmology*, 2016. 36(4): p. 493-8.
7. Miller, M.A., et al., Postoperative hemorrhagic occlusive retinal vasculitis associated with intracameral vancomycin prophylaxis during cataract surgery. *Journal of Cataract & Refractive Surgery*, 2016. 42(11): p. 1676-1680.
8. Gurusamy, K.S., et al., Antibiotic prophylaxis for the prevention of methicillin-resistant *Staphylococcus aureus* (MRSA) related complications in surgical patients. *Cochrane Database of Systematic Reviews*, 2013(8): p. CD010268.
9. Aronson, J., *Meyler's Side Effects of Drugs* (16th edition). 2016, Elsevier Science & Technology: Oxford, UK.

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