CLINICAL GUIDELINE

Post-Operative Endophthalmitis Management

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

Version Number:	6
Does this version include changes to clinical advice:	Yes
Date Approved:	10th September 2025
Date of Next Review:	30th September 2028
Lead Author:	Jennifer Hind
Approval Group:	Antimicrobial Utilisation Committee
Guideline ID number:	125

Important Note:

The online version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

Management of Post-Operative Endophthalmitis

Authors: J Hind[1], A Cox[1], N Khanna[2], J Murdoch[1]

1. **Tennant Institute of Ophthalmology, Gartnavel General Hospital**
2. **Department of Microbiology, Queen Elizabeth University Hospital**

Endophthalmitis is a serious complication that can occur after any intraocular intervention. It usually presents 12 to 84 hours post procedure depending on the virulence of the organism. It is essential that it is managed promptly and aggressively as this can determine the final outcome.

History of intraocular surgery, including intravitreal drug injection, within last 6 weeks

- Patient history
- Symptoms
- Assess and document positive and negative signs in notes

Investigations (Should NOT delay **prompt** treatment):
Vitreal biopsy – needle biopsy or vitreous cutter (see below)
Blood tests: FBC, U&Es, LFT, glucose, CRP; Blood cultures
Consider ultrasound

Management:

- Urgent intravitreal antibiotics
- Topical antibiotics and steroids
- Admit to ward 1C
- Involve senior clinician

Intravitreal antibiotics should be administered as soon as possible. Ideally, this should be performed at the hospital to which the patient presents. If for any reason this is not possible, or if there is any unacceptable delay (more than 1 hour) then the most senior clinician on site must decide whether transfer to Gartnavel is more appropriate to administer treatment and is in the patient's best interest. They must liaise with the team at Gartnavel if this is the case.

If waiting to take to theatre results in a significant delay, intravitreal antibiotics can be administered in the ward or clinic.

Performing Vitreal Biopsy and Intravitreal Injection of Antibiotics in Theatre:

- Consent patient for vitreal biopsy and intravitreal injection of antibiotics
- While the Royal College of Ophthalmologists does not recommend a particular antibiotic for use, intravitreal injection of **Vancomycin (1mg/0.1ml)** and **Ceftazidime (2mg/0.1ml)** are a recognised and acceptable combination (instructions for preparation available in theatre, ward 1C and NHS GG&C intranet (drug monographs, "medusa" website). Antibiotics should be made up under aseptic technique.

Antimicrobial Utilisation Committee August 2025
Review Date: May 2025
Next Review Date: September 2028

- Once biopsy performed, **send sample via taxi** to appropriate microbiology lab (GRI or QEUH) for Gram stain, culture and sensitivity and **contact lab** (out of hours, contact on call Biomedical Scientist for Microbiology). Do not send down the "pod" system.
- If there is ambiguity in the diagnosis of endophthalmitis, the consultant responsible for the care of the patient should consider biopsy using vitreous cutter rather than needle biopsy.
- Needle biopsy (25G) is adequate if there is no vitreous cutter available to prevent unacceptable delay. There is a vitreous cutter available in theatre G, Gartnavel General.

Factors to note in clinical history:

Patient history	**Symptoms**
Diabetes / Immunosuppression Complicated surgery Initial improvement in vision/ symptoms prior to deterioration Compliance with topical therapy	Lid swelling Blurring of vision Eye pain / photophobia Red eye Discharge

Clinical signs to document (positive and negative)

Visual acuity / Light perception / projection
RAPD/Reduced red reflex
IOP
Corneal oedema / Infiltrate/ Bleb / Corneal wound seidel status
AC activity / fibrin / hypopyon (+ height)
Vitritis – consider ultrasound to assess for density of vitritis and retinal detachment

People to inform when Post-operative endophthalmitis presents:

- 2nd on call registrar if out of hours/ Consultant in ARC/ On call Consultant
- Surgical team in theatre if presenting during working hours to arrange biopsy
- On call theatre team if out of hours (biopsy can be performed under LA)

Patients should be admitted to ward 1C, Gartnavel General Hospital:

  - Topical antibiotics can be prescribed at clinician discretion.
  - Consider intensive dilation and subsequent Atropine OD (if no contraindications)
  - Topical steroids (preservative free)
- Systemic antibiotics: These have not been shown to alter final visual acuity or media opacity. If wishing to commence systemic therapy, recommended treatment is:
  - 1st line: Oral moxifloxacin* 400mg once daily for 10 days
  - 2nd line: IV Vancomycin (as per GG&C dosing guidelines) and IV Ceftazidime 1g TID for 48 hours/until signs of clinical improvement, stepping down to PO Moxifloxacin or alternative depending on culture/sensitivities and microbiology advice.
  - Recommended course of treatment is 10 days. Consider changing systemic IV therapy to oral equivalent as soon as possible. Discuss with microbiology.
- Obtain / hand over to obtain gram stain result and check culture results at 48 hours.
- Liaise with 2nd on / consultant team to arrange subsequent review the next day.

When able, the following people should also be informed (non-urgent):

- Infection control (through switchboard)

- Clinical director
- All cases of post-operative endophthalmitis should be entered on the DATIX system

MHRA Quinolone Warning*

Advice for healthcare professionals:

- systemic (by mouth, injection, or inhalation) fluoroquinolones can very rarely cause long-lasting (up to months or years), disabling, and potentially irreversible side effects, sometimes affecting multiple systems, organ classes, and senses
- advise patients to stop treatment at the first signs of a serious adverse reaction, such as tendinitis or tendon rupture, muscle pain, muscle weakness, joint pain, joint swelling, peripheral neuropathy, and central nervous system effects, and to contact their doctor immediately for further advice – sheet for patients
- avoid use in patients who have previously had serious adverse reactions with a quinolone or fluoroquinolone antibiotic
- prescribe with special caution for people older than 60 years and for those with renal impairment or solid-organ transplants because they are at a higher risk of tendon injury
- avoid use of a corticosteroid with a fluoroquinolone since coadministration could exacerbate fluoroquinolone-induced tendinitis and tendon rupture
- report suspected adverse drug reactions to fluoroquinolone antibiotics on the Yellow Card website or via the Yellow Card app (download it from the Apple App Store, or Google Play Store)

BNF Cautions Moxifloxacin

Can prolong the QT interval

- Caution in conditions that pre-dispose to seizures
- Diabetes (may affect blood glucose)
- Exposure to excessive sunlight and UV radiation should be avoided during treatment and for 48 hours after stopping treatment
- G6PD deficiency
- History of epilepsy
- Myasthenia gravis (risk of exacerbation)
- Psychiatric disorders