United Kingdom and Ireland Society of Cataract and Refractive Surgeons (UKISCRS)

Recommendations of Practice for Dropless Cataract Surgery 2026

Overview

Dropless Cataract Surgery (DCS) is a practice that seeks to replace courses of postoperative topical eye drops, administered by patients or their caregivers, with depot or other single-dose medications administered by the surgeon at the end of surgery.

A more comprehensive approach to DCS may also extend to the abandonment of preoperative eye drops, whereby analgesia and pupillary dilation are instead achieved through intraoperative depot medications. However, these recommendations and summary focus purely on the avoidance of postoperative eye drops.

Postoperative cataract surgery management has traditionally required 3-4 weeks of topical eye drops—typically antibiotics, steroids, and nonsteroidal anti-inflammatory drugs (NSAIDs)—to prevent infection and control inflammation. While effective, drop regimens are costly, inconvenient, have an environmental impact and are prone to poor compliance, especially amongst elderly patients who may struggle with instillation technique or memory.

Dropless cataract surgery is an approach in which surgeons administer intraocular or periocular medications during the procedure, eliminating or significantly reducing the need for postoperative drops. Methods include intracameral antibiotics, subconjunctival depo steroid injection and NSAID intracameral irrigation during surgery.

Benefits include improved patient compliance, reduced risk of postoperative complications from missed or incorrect dosing, and simplified postoperative care. Studies suggest comparable outcomes to standard drop regimens in terms of infection and inflammation control. However, concerns remain regarding potential complications such as elevated intraocular pressure, and the need for careful patient selection. Furthermore, there are currently no MHRA-licensed periocular or intraocular products indicated for the treatment of intraocular inflammation.

There remains a lack of national guidance in this approach to routine uncomplicated cataract surgery with varied practices occurring across various NHS and independent sector healthcare providers.

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At a glance: UKISCRS Recommendations for Dropless Cataract Surgery (2026)

1. At commencement of surgery, ensure sterile preparation with topical povidone iodine 5-10%. In cases of true povidone-iodine allergy, chlorhexidine 0.1% can be used as an alternative.

2. At completion of routine, uncomplicated cataract surgery:
    a. Confirm all incisions are watertight.
    b. Administer cefuroxime (1mg / 0.1ml) or equivalent antibiotic approved for intracameral (IC) use.
    c. Administer subconjunctival triamcinolone (off-label use – 0.4ml of 10mg/ml solution [dose: 4mg] or equivalent steroid) 5-6mm inferior to inferior limbus/inferior fornix – it is also possible to use a smaller volume (with a higher concentration) to produce a smaller bleb, although this would result in slower absorption.
    d. Ensure follow-up is scheduled no later than 4 weeks postoperatively (can be in community setting).
    e. Provide clear instructions to the patient that should they experience intractable pain or reduced vision postoperatively, then they must be seen by an ophthalmic practitioner urgently. An emergency phone number to the unit should be given to all patients.

3. Only consider prescribing topical antibiotics if additional risk factors for endophthalmitis or infectious keratitis exist:
    a. Leaking / sutured incisions
    b. An epithelial defect
    c. Prolonged / complicated surgery
    d. Ophthalmic co-pathology e.g. uncontrolled blepharitis
    e. Patients at high risk of infection e.g. immunocompromised, uncontrolled diabetes mellitus
    f. Only eye patient
    g. Pre-existing corneal pathology such as severe dry eyes or if significant corneal oedema is expected after surgery

4. Patients who should not receive the Dropless Regimen (should receive **topical** steroids +/- topical NSAIDs):
    a. History of steroid-induced glaucoma or known steroid responder
    b. Uncontrolled glaucoma or advanced optic nerve damage
    c. Previous glaucoma drainage surgery
    d. Known hypersensitivity to the injected medications (e.g. triamcinolone, cefuroxime, moxifloxacin)
    e. Eyes with pre-existing retinal pathology e.g. macular oedema, epiretinal membrane, retinal inflammation & uveitis, where tailored anti-inflammatory management is needed
    f. History of corneal transplantation
    g. High myopia (-6.00D or greater or an axial length $\geq$ 26.0mm)
    h. Thin sclera / scleromalacia
    i. Ocular surface disease with conjunctival scarring or fibrosis such as mucus membrane pemphigoid, Stevens Johnson syndrome, severe dry eyes, rheumatoid arthritis, and neurotrophic keratitis

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Rationale for Dropless Cataract Surgery

It is easy to continue doing something just because it has always been done that way. However, we must be open to modifying and updating our practice in the light of robust new evidence, particularly when there may be significant benefits to patients and to society in general.

Potential advantages of DCS include:

- Improved compliance with medications – particularly for patients requiring eye drops for other conditions such as glaucoma or ocular surface disease
- Reduced need for additional support postoperatively – particularly for patients lacking dexterity or with cognitive impairment
- Improved patient experience
- Reduced ocular surface toxicity
- Possible reduced dry eye sequelae
- Reduced antibiotic resistance
- Reduced financial costs to the health service
- Reduced carbon footprint
- Theoretically **reduced** risk of postoperative sequelae as no need for patient compliance, and no risk of accidental trauma / contamination from self-administering eye drops

Potential disadvantages of DCS include:

- Increased surgical burden of administering medications at completion of surgery
- Potential for subconjunctival haemorrhage in topical surgery
- There is a perception amongst some surgeons of an increased risk of certain postoperative sequelae (e.g. postoperative CMO, iritis). However, these concerns are largely addressed by the currently available evidence, with more studies in progress.

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Current practice: results from a survey of UKISCRS members regarding dropless cataract surgery [1]

Figures below show NHS results, with ISPs (Independent Sector Providers) in brackets

- Small sample size (especially in ISP)
- NHS responses very similar to independent private practice (IPP) responses
- Some differences between NHS, IPP and ISP
- 95% (93%) currently administer intracameral antibiotics routinely at end of surgery, 98% (100%) of whom use Aprokam® (Thea Pharmaceuticals). No change in practice required for most practitioners.
- 28% (36%) currently administer routine steroid at end of surgery, but only 47% (60%) use a subconjunctival depot injection (significant change in practice required for dropless approach)
- 79% (29%) prescribe topical antibiotics and 97% (93%) prescribe topical steroids postoperatively (significant cost saving potential, plus reduced toxicity / improved compliance / reduced antibiotic resistance / improved carbon footprint, especially in the NHS setting)
- Topical NSAIDs predominantly used for diabetic or ‘high risk’ cases only. This practice can continue per surgeon discretion
- Attitude to change: 67% either would consider dropless (52%) or already practicing it (15%); 14% would not consider it and 19% unsure.

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Summary of Evidence

Preoperative Antisepsis

Endophthalmitis prevention starts with proper preoperative antisepsis. More than any other form of preoperative antisepsis, the literature supports the essential role of povidone-iodine (PVI) for ocular surface preparation prior to cataract surgery.

Topical PVI as a form of prophylaxis for cataract surgery has become a standard of care. A mandatory step to reduce bacteria in the wound area is to apply povidone iodine 5-10% to the cornea, conjunctival sac and periocular skin for a minimum of three minutes prior to surgery. Early data showed that near 90% of ocular surface flora were reduced with use of PVI [2] and the literature continues to support PVI as the primary evidence-based preoperative intervention to reduce postoperative endophthalmitis rates [3-8]. Where PVI is contraindicated (true allergy is rare and hyperthyroidism only a relative contraindication to this singular use), aqueous chlorhexidine 0.1% may be used [9].

Antibiotics

There is strong evidence that intracameral (IC) cefuroxime significantly reduces the risk of endophthalmitis [10], with several large studies showing that postoperative topical antibiotics (when IC antibiotics are given) have no additional benefit [11-14]. There has not yet been a randomised control trial (RCT) directly comparing combined IC and postoperative topical antibiotics, with IC antibiotics alone.

Commonly used IC antibiotics include cefuroxime, moxifloxacin, and vancomycin. Cefuroxime is most widely used in Europe, where a commercial, single-dose preparation licensed for IC use is available. There is no evidence for significant cross-reactivity of IC cefuroxime in penicillin-allergic patients. If IC cefuroxime cannot be used, the most suitable alternative is IC moxifloxacin, for which large retrospective studies from the Aravind Eye Care System in India and elsewhere provide strong support [15,16]. IC moxifloxacin 0.1ml (0.5mg) can either be made up in-house, or 0.1ml of preservative-free topical 0.5% moxifloxacin preparation can be used. This is supported by The Royal College of Ophthalmologists (RCOphth) [17]. The primary safety concern with off-label moxifloxacin use relates to compounding or dilution errors, or using formulations that contain preservatives. Use of IC vancomycin has significantly declined due to its rare association with haemorrhagic occlusive retinal vasculitis (HORV) and rigorous preparation is crucial to avoid harm [18]. Its use is therefore not recommended where other antibiotics are available.

Several large UK providers, including several Independent Sector Providers and NHS Trusts, have already abandoned the routine use of topical antibiotics after uncomplicated cataract surgery. None of these providers (both NHS Trusts and Independent Sector Providers) have reported any increased incidence of endophthalmitis in the years after making this change.

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Steroids

There is strong evidence that subconjunctival steroids are at least non-inferior to topical steroids in the prevention of postoperative cystoid macular oedema (CMO) and intraocular inflammation [19,20]. There is promising emerging evidence that subconjunctival steroids may be superior in the prevention of postoperative CMO, with a similar incidence of raised intraocular pressure [20].

The typical dose used in most recent studies is 2-4mg of triamcinolone [20,21]. For the same dose (e.g. 4mg), a higher volume of lower concentration steroid (i.e. 0.4ml of 10mg/ml) has been shown to have similar efficacy in preventing inflammation, while reducing the risk of secondary raised intraocular pressure, compared with a smaller volume of higher concentration steroid (i.e. 0.1ml of 40mg/ml). Additional information is available at www.eyeonsight.org, a resource developed by Neal Shorstein, MD, a recognised researcher in dropless cataract surgery.

The ESCRS EPICAT study (Effectiveness of Periocular drug Injection in CATaract surgery) is a European randomised controlled multicentre trial, currently in progress, that aims to investigate the effectiveness of intra-/periocular anti-inflammatory drugs (specifically subconjunctival triamcinolone and intracameral ketorolac added to the irrigation fluid used during surgery) at preventing CMO after cataract surgery [22]. Preliminary results show that subconjunctival triamcinolone 10mg is an effective dropless strategy for the prevention of CMO. Final results are expected soon and will help inform decision-making.

It should be noted that triamcinolone is not licensed in the UK for the treatment of ocular inflammation, irrespective of route of administration or formulation. Its use for postoperative inflammation control after cataract surgery would therefore be considered off-label and this carries implications for patients and prescribers. There is greater responsibility placed on the clinician for the safety and efficacy of the treatment. Clinicians are also required to inform patients that the treatment is off-label, discuss the potential risks and benefits and obtain informed consent. Nevertheless, triamcinolone acetonide has been used off-label in ophthalmology for decades due to its potent anti-inflammatory effects and prolonged activity within the eye. Its use is supported by clinical experience and published evidence, although it remains outside formal regulatory approval.

NSAIDs

NSAIDs are typically used postoperatively to reduce the risk of CMO in high-risk patients such as diabetics but not generally in routine cases. There is some evidence that intracameral NSAIDs reduce pain during surgery and might reduce inflammatory sequelae postoperatively [23,24]. At the time of writing, there are no studies comparing intracameral NSAIDs alone with a subconjunctival steroid depot; the ESCRS EPICAT study is currently investigating the effectiveness of adding Ketorolac to the irrigation fluid used during surgery to prevent CMO.

Reviews of Dropless regimes

There are a number of comprehensive evidence reviews of dropless cataract surgery which support these recommendations [25,26].

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Conclusion

There is now a strong evidence base for recommending dropless cataract surgery in the management of routine uncomplicated cataract surgeries in the UK. This document also supports the recommendations of the recent Sustainability Cataract Surgery guidelines from the RCOphth [27].

We encourage the relevant regulatory bodies and industry partners to collaborate on the development of licensed, purpose-designed periocular or intraocular anti-inflammatory products for dropless cataract surgery.

It is our suggestion that the RCOphth release formal guidance to formalise the basis of dropless cataract surgery for ophthalmologists in the UK, with the supporting evidence presented here. UKISCRS is happy to support the college with this process as required.

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