Authors: Mariya Moosajee and Veronica Ferguson

Dear Editor,

Thank you for giving us the opportunity to reply to Aslankurt and colleagues. We acknowledge that under their care in 2011, 8 out of 148 patients developed post-operative cystoid macular edema (CME) on day 1 post-surgery (5.4%) following uneventful phacoemulsification with stromal hydration of clear corneal incisions (CCI) with 1mg/0.1ml cefuroxime rather than intracameral administration. There are insufficient details on the case mix, overall surgical technique and definition of CME provided to substantiate the causal relationship. All cases had resolved after one-week post surgery. There has been one case report of CME on post-op day 2 following a standard dose of intracameral cefuroxime (0.1 ml of 10 mg/ml, Zinnat; GlaxoSmithKline, Marly-le-Roi, France) during routine phacoemulsification.[1] Optical coherence tomography showed a large retinal serous detachment with a schisis-like appearance of the outer nuclear layer. A similar case of serous macular detachment and CME at 1 day after uncomplicated phacoemulsification was noted after a standard dose (62.5 mg/ml, Zinacef, GlaxoSmithKline, Brentford, UK) of subconjunctival cefuroxime at the end of surgery.[2] Both cases also resolved by week 1 post-operatively, and the cause remains unexplained.

Overall, a 1–2% risk of clinically significant CME has been quoted in patients with no risk factors.[3] However, this rate has increased to 41-55% in studies using optical coherence tomography or fluorescein angiography to define CME.[4, 5] In our experience, we have now conducted over 1200 routine phacoemulsifications with a combination of both intracameral and stromal hydration of CCI with cefuroxime in non-diabetics under one senior surgeon (VF) with no adverse effects or post-operative complications, with auditing of patients up to 6 weeks post-surgery. We have studied the retina of mice that have undergone stromal hydration with 1mg/0.1ml cefuroxime, without phacoemulsification, up to 6 weeks post-operatively and did not detect any signs of retinal oedema or detachment. BSS and cefuroxime groups were comparable to uninjected wildtypes at all timepoints (Fig 1). The limitation of the mouse experiments is the lack of intraocular surgery, but this indirectly suggests that this dose of drug itself does not cause any retinal toxicity in this model organism. With the advent of Aprokam®, a one-step reconstitution of cefuroxime, it is hoped dilution errors have been minimized. However, a pre-filled single-use syringe containing 10mg/ml cefuroxime would be ideal to eliminate any preparation and dosage errors. As suggested in the conclusion of the original article, a well-designed clinical trial is required to answer the question of patient safety with a view to evaluating rates of post-operative endophthalmitis following cataract surgery. Surgeons should report any adverse complications if seen in their practice.

Figure 1. Retinal histology following stromal hydration of a clear corneal incision with 10mg/mL cefuroxime (CEF) at day 1 post-operatively compared to an unoperated mouse eye. There were no differences in gross histological appearances between CEF, BSS and unoperated groups at day 1, week 1 and 6 weeks post-operatively (n=3 per group and timepoint).

References

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