Re: Haripriya et al.: Endophthalmitis reduction with intracameral moxifloxacin prophylaxis: an analysis of 600 000 surgeries.

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TO THE EDITOR: In the recent issue of Ophthalmology, Haripriya et al1 reported the outcomes of 600 000 cataract surgeries. This study had no standardized protocol and included 10 different hospitals. Although the sample size is impressive, the study is necessarily limited by its retrospective design. Clearly, the highest level of evidence comes from prospective randomized clinical trials.2

The study by Haripriya et al1 includes limited information about follow-up and visual acuity testing. Of note, that the final visual acuities provided in Table 6 are pinhole visual acuities, not Snellen visual acuities, which makes it difficult to compare these outcomes with randomized clinical trials that used standardized refraction protocols, such as the Endophthalmitis Vitrectomy Study. In addition, the microbial flora and practice patterns featured in this study may differ from those in other parts of the world, including the United States. Therefore, the results may not apply to other geographical locations.

The use of intracameral antibiotics during cataract surgery is controversial. Three antibiotics for intracameral use during cataract surgery have been primarily reported. These are vancomycin, cefuroxime, and moxifloxacin. All 3 antibiotics have limitations and risks that must be considered before their use in general. Vancomycin is associated with hemorrhagic occlusive retinal vasculitis; a poorly understood and potentially devastating complication.3 Cefuroxime has been studied in a randomized controlled trial, but a prepackaged formulation indicated for intracameral use is unavailable in many nations, including the United States, India, and Japan. Perhaps owing to these concerns, intracameral moxifloxacin is used increasingly as the drug is readily available.

The investigators used moxifloxacin (Auromox, Aurolab, Tamil Nadu, India) that was prepared by a pharmaceutical company affiliated with their hospital/clinic system, and the intracameral injection was reconstituted from a sterile vial. The risks of compounded errors, contamination, storage, and transport of the drug are important concerns. Cakir et al4 reported a case series of Fusarium endophthalmitis in 8 patients in whom compounded intracameral cefuroxime was used. There is a potential risk for toxic anterior segment syndrome and corneal endothelial toxicity.

Aside from toxicity, there are concerns about fluoroquinolone antimicrobial efficacy. Coagulase-negative Staphylococcus is the most common cause of postcataract surgery endophthalmitis. In the United States, fluoroquinolone (including moxifloxacin) resistance rates among coagulase-negative Staphylococcus endophthalmitis isolates have been reported as high as 40% to 60%.5

All intracameral antibiotics are associated with increased costs (moxifloxacin costs average retail price ranges from $175 to $225 per vial in the United States), as well as increased risks of emergence of drug resistance. The risk of post cataract surgery endophthalmitis in the United States without the use of intracameral antibiotics is about 0.02% to 0.10%. Even using a 0.1% incidence rate for calculations, it would require intracameral injection in 999 cases to prevent one case of endophthalmitis. These 999 patients would be exposed to increased costs in addition to risks of dilution errors, toxic anterior segment syndrome, and corneal endothelial toxicity.

Despite the results from this large retrospective study, the role of off-label prophylactic intracameral moxifloxacin still has to be validated by a prospective randomized controlled trial. Haripriya et al1 conclude, “This study does not constitute level I evidence, however, and there is no consensus that intracameral antibiotic prophylaxis should be the standard of care.” We agree with this statement.

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References
