Adoption of intracameral antibiotic prophylaxis of endophthalmitis following cataract surgery

Update on the ESCRS Endophthalmitis Study

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To determine the use of intracameral cefuroxime at the end of cataract surgery since the beneficial results were first reported by the European Society of Cataract and Refractive Surgeons Endophthalmitis Study Group in 2006, 250 ophthalmic surgeons affiliated with both public and private hospitals and clinics across Europe were surveyed. The questions regarded their awareness of the results of the ESCRS endophthalmitis study and their current use or non-use of intracameral antibiotics in their cataract procedures. Seventy-four percent of respondents said they always or usually use intracameral antibiotics in their cataract surgery procedures. The most frequently cited reasons for not using cefuroxime or other intracameral antibiotics was the lack of an approved commercial preparation and related anxieties regarding the risk of dilution errors and contamination. More than 90% of respondents said they would use cefuroxime if an approved single-unit dose product were commercially available.

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The European Society of Cataract and Refractive Surgeons (ESCRS) Endophthalmitis Study, the results of which were published in 2006,[1] showed a 5-fold reduction in the endophthalmitis rate in patients randomly allocated to intracameral cefuroxime compared with those who did not receive intracameral antibiotics. The study's findings appeared to confirm data from the Swedish Cataract registry, which showed a reduction in endophthalmitis rate from 0.48% to 0.06% after the Swedish ophthalmologists adopted the use of intracameral cefuroxime in 1996.[2]

Adoption of the prophylactic use of intracameral antibiotics following publication of the results of the ESCRS clinical trial has varied widely around the world. For example, a survey of American Society of Cataract and Refractive Surgery (ASCRS) and ESCRS members carried out in 2010 and presented at the XXVIII Congress of the ESCRS in 2011[A] showed that 60% of ESCRS respondents used intracameral antibiotics compared with only 20% of ASCRS respondents. These results showed no significant change from those in the survey that the ASCRS Cataract Clinical Committee conducted approximately 1 year after the ESCRS endophthalmitis study.[3] Only 23% of more than 1300 ASCRS repondents were injecting intracameral antibiotics; however, 82% said they would do so if a reasonably priced commercial preparation were available.

A survey of ophthalmic surgeons in the United Kingdom conducted in 2009 by Gore et al.[4] found that 55% of respondents were injecting intracameral cefuroxime. Of those using intracameral cefuroxime, 48% switched after the publication of the ESCRS survey. The most common reason for not using

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intracameral cefuroxime was the dilution risks associated with preparing the drug in the absence of a commercially available formulation.

The ESCRS has published guidelines supporting the use of prophylactic intracameral antibiotics, specifically for cataract surgery, advising the use of intracameral cefuroxime.[5] In their preferred practice guidelines for cataract surgery, the American Academy of Ophthalmology states that "only intracameral antibiotics at the end of the case guarantees suprathreshold antibiotic levels for an extended period of time."[6] The ESCRS conducted this survey to determine the current use of prophylactic intracameral antibiotics by European ophthalmic surgeons.

MATERIALS AND METHODS

The ESCRS commissioned the U.K.-based market research firm ASE to conduct up to 250 computer-assisted telephone interviews. Based on consultations with ASE, it was agreed to select 250 surgeons from a list of 500 randomized from the ESCRS membership database. The 500 selected were weighted by country according to each country's ESCRS membership. In the end, 193 telephone calls were completed, 77% of the targeted 250 calls, from 31 European countries. The interviews were conducted in English, although participants were offered the option to complete the interview in Spanish, French, German, or Italian. After answering some qualifying questions regarding type of practice, years in practice, and clinical specialty, the respondents were asked the questions in Figure 1.

Are you aware of the ESCRS endophthalmitis study?

Do you routinely use intracameral antibiotics at the timeof cataract surgery?

What antibiotic do you use?

If no antibiotic used, why not?

Do you routinely use any other antibiotic at the time of surgery?

What antibiotic do you use?

Would you use an approved commercial preparation of cefuroxime if it were available?

Would you consider €20 per patient a reasonable cost for a commercial preparation?

If no, what would you consider a reasonable cost for a commercial preparation?

Do you use intracameral cefuroxime for any other intraocular surgery?

Figure 1. Questions in the ESRS survey.

RESULTS

A total of 193 ESCRS-member surgeons participated in the survey. The distribution between hospitals, private practice, and university or government institutions is shown in Figure 2.

The use of intracameral antibiotics among the 193 respondents is shown in Figure 3. Of the 74% who used intracameral antibiotics, 82% used cefuroxime and 18% used other agents, including vancomycin, moxifloxacin, and gentamicin. Reasons given by the 26% not using intracameral antibiotics are shown in Figure 4.

The respondents' answers to the question of whether they would use a commercial single-dose preparation of cefuroxime if one became available are shown in Figure 5. Of the 14% who would not use a commercial preparation, 12 were already using intracameral cefuroxime and were satisfied with the results. They saw no need to switch to a commercial preparation. Conversely, of the 73% who said they would use a commercially available preparation of cefuroxime, 29% were not currently using intracameral antibiotics. Therefore, only 8% of the 193 surgeons interviewed would not use intracameral cefuroxime whether or not it was commercially available.

With reference to a reasonable cost of a commercially prepared product, the respondents were equally divided on the reasonableness of €20 per patient. Of

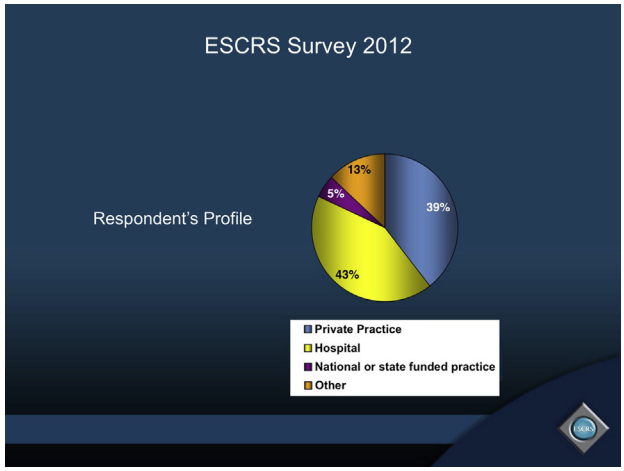

Figure 2. Practice patterns of respondents.