Endophthalmitis in Europe: Data collection conundrum

Behndig et al. have summarized available data pertaining to the use of intracameral cefuroxime in Europe for prophylaxis against endophthalmitis following cataract surgery. The readership was alerted to the significant differences in data collection methods between its component countries.

Data from mandatory National Registries were available from only Sweden and the Netherlands. No information on endophthalmitis rates was available from Belgium and Italy. Therefore, figures were extrapolated from the European Registry of Quality Outcomes for Cataract and Refractive Surgery database and the European Society of Cataract and Refractive Surgeons trial, respectively. Data were collected from France, United Kingdom, Germany, Spain, and Poland by way of nonmandatory registries or surveys. The significant differences in data collection allow limited conclusions to be drawn about the true rate of endophthalmitis within each country. This therefore eliminates the ability to compare endophthalmitis rates between European countries.

There are widely varying reported rates of endophthalmitis. These variations were apparent in the data reported by Behndig et al., in which rates ranged from less than 0.04% in Sweden to 0.50% in Spain. Considerable disparity in published rates of endophthalmitis also exists within single countries; eg, 0.03% to 0.20% in the United Kingdom.

These variations are evident in other studies from around the world regarding purported rates of endophthalmitis. The systematic review by Taban et al. suggests that in 2000 to 2003, the worldwide incidence of endophthalmitis was 0.265%. Correspondence published in rates of endophthalmitis also exists within single countries; eg, 0.03% to 0.20% in the United Kingdom.

These large discrepancies in endophthalmitis rates may be accounted for by the differing methods of data collection. Data obtained in a nonmandatory fashion will probably underestimate true rates of endophthalmitis.

We concur with the statement by Behndig et al. that “the [given] overview does not pretend to report actual practice patterns and epidemiological facts.” For this reason and others mentioned, we recommend a cautious interpretation of the figures.

Furthermore, the role of intracameral cefuroxime in the prophylaxis of endophthalmitis remains uncertain. There are other confounders to consider, including variations in patient factors, perioperative interventions, and the severity and management of surgical complications. Taking these into consideration, as well as the nonstandardized methods of data collection, no definite correlation between the immediate postoperative administration of intracameral cefuroxime and reduced rates of endophthalmitis can be inferred.

We commend Behndig et al. on their attempts to shed light on the practice patterns of endophthalmitis prophylaxis on such large scales. As cataract surgeons, our definitive aim should be to determine the etiology of endophthalmitis following cataract surgery. Endophthalmitis should be studied in a large prospective no-exclusions study, avoiding cataract surgeon self-reporting. Our group encourages further discussion on this matter.

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REFERENCES

Reply: We thank Dr. Williams et al. for their comments and interest in our article. Ideally, the incidence of postoperative endophthalmitis should be 0%, but the current rates has become very close to this goal thanks to improved surgical techniques, reduced complication rates, and improved quality control—
Endophthalmitis in Spain: More than meets the eye?

The thought-provoking article by Rodríguez-Caravaca et al. concluded that intracameral cefuroxime has “reduced the incidence of endophthalmitis significantly since its introduction.” The study documents a decrease in the endophthalmitis rate following cataract surgery after 2005. However, there are limitations associated with a before-and-after analysis, which may result in crude comparisons. Our group would like to take this opportunity to discuss other salient variables that may contribute to the base rate of endophthalmitis following cataract surgery.

Our group concurred with the statement by Rodríguez-Caravaca et al. that “…intraoperative complications and type of surgical incision can influence its onset [of endophthalmitis].” Relevant to this topic are the results of the 2005 systematic review by Taban et al. that included over 3.1 million cataract surgeries. This systematic review reported an increase in the incidence of endophthalmitis following the introduction of sutureless clear corneal incisions.

Rodriguez-Caravaca et al. reported major peaks in endophthalmitis rates within a comparable time frame. Furthermore, no statistical difference in the rates was demonstrated between the 14 surgeons in their group. Therefore, other contributing factors such as the surgical environment and incision types may have accounted for the endophthalmitis peaks in 2002 and 2005. This was not explored in their study.

The statement by Rodriguez-Caravaca et al. that “…the surgical technique and the technical conditions in the operating rooms did not change substantially during the study” is worth revisiting. We were surprised that cataract surgical techniques did not change substantially and, by inference, evolve over the 14-year period. Rodriguez-Caravaca et al. also specified that no substantial changes to cataract surgery protocols were made prior to the introduction of intracameral cefuroxime in 2005. However, the readership is not provided with information as to whether changes initiated after 2005 were identified and considered in their analysis. Thus, any potential role of intracameral cefuroxime in reducing the reported endophthalmitis rate must be interpreted with caution.

Our group was nevertheless impressed that these surgeons waited a full 5 minutes with the eye bathed in povidone-iodine 5%. Mechanisms compromising corneal wound integrity in cataract surgery undoubtedly contribute to the postoperative ingress of fluids, debris, and bacteria into the eye. These include poor wound construction, postoperative ocular hypotony, and extraocular mechanical pressure.

Stromal hydration is a widely used surgical technique that has been demonstrated to improve wound integrity in cataract surgery. However, there are conflicting data regarding the duration of efficacy of stromal hydration in achieving an adequately sealed wound. Alarmsingly, Olson published a duration of 15 minutes for effective wound closure following hydration. Given this uncertainty, we recommend wound suturing be undertaken to ensure definitive wound closure. Notionally, this should obviate the need for intracameral cefuroxime.

It is clear that most of the confounding factors that contribute to the endophthalmitis rate have not been incorporated in the design of the study by Rodriguez-Caravaca et al. In light of this, greater...