Guest Editorial

Practice patterns in pediatric cataract management: Time for real world data

Pediatric cataract management has gained tremendous focus in the past decade.[1-14] There is a renewed sense that while cataract surgery in adults appears to be evolving at a furious pace that pediatric cataract surgery is perhaps lagging in our understanding of the basic physiological and anatomical issues that play a role in a successful outcome.

In this issue of the IJO Kemmanu *et al*.[15] describe an E-Survey assessing the management patterns of Indian pediatric ophthalmologists for pediatric cataract and ectopia lentis. They contacted members of the Indian Strabismus and Paediatric Ophthalmology Society and sent surveys out with a return of approximately 20%.

Their conclusions based on this study were that "The management of lens anomalies by pediatric ophthalmologists in India varies with laterality and appears to be comparable to that followed worldwide."

Should the practices of pediatric ophthalmologists in India be comparable to those of other parts of the world? Only if the circumstances of the environment are similar. Extrapolating results from studies in other parts of the world may not be relevant or appropriate.

Pediatric cataracts are responsible for more than 1 million childhood blindness in Asia. In developing countries like India, 7.4%–15.3% of childhood blindness is due to cataract.[1] The socioeconomic status of a large proportion of children with cataracts in India precludes reliable rehabilitation with contact lenses for aphakia. It is noteworthy that the Infant Aphakia Treatment Study (IATS)[2,3] compared the best correction (contact lens) with pseudophakia and not aphakic spectacle correction with pseudophakia. Quoting the IATS as a reason not to implant under the age of 2 years becomes less relevant. A true comparison for real world evidence (RWE)[4] in India would be to compare unilateral intraocular lens (IOL) to unilateral aphakic correction.

Moreover, if a child has a unilateral cataract, he or she is still likely to have a normal life as long as the unaffected eye remains healthy and normal. It is, in fact, the bilateral dense cataracts in children that are of greater developmental concern; evidence from a large longitudinal cohort study from the UK suggests that bilateral pseudophakia may result in better visual outcomes.[5] Why should this be ? Well most cases of unilateral cataracts are due to some form of PHPV with an eye that is usually smaller than the unaffected eye. In cases of bilateral cataracts, the eyes are often more normal in size.

More and more the concept of real world data (RWD)[4] defined as data derived from a number of sources that are associated with outcomes in a heterogeneous patient population, is becoming increasingly favorable. Conducting a randomized control trial to answer a question that could be answered with existing data is wasteful both of resources and investigator effort and exposes human subjects to unnecessary risks and costs.

If we look at the numerous papers published on the subject of pediatric cataract, we begin to see that there have been numerous retrospective papers, survey data, one or two randomized control trials, some meta-analysis studies, and a Delphi consensus paper.[2,3,5-14] Do we indeed have enough data already to help answer some questions about pediatric cataract management? Maybe so but to develop RWD that leads to RWE the clinical question that we want to ask must be framed appropriately.

Consider that several authors from the Indian subcontinent,[6-8] USA and Asia[12-14] have published studies that counter the findings of IATS,[2,3] and that the only individual patient meta-analysis[9] contradicts other aspects of IATS. Given this nonconsensus and accepting that in IATS, the surgeon was allowed to change/modify the perioperative drug regimen including systemic steroid application,[2] which may or may not have influenced the amount of intraocular inflammation, one might want to change the clinical question from "Are IOL implants better for visual rehabilitation than aphakic correction in infants?" to two related questions: "In which infant eyes can intraocular implants be placed safely without excessive inflammation?" and "If infant eyes are safely implanted what is the visual outcome in these eyes compared to aphakic spectacle correction?"

To answer the latter two questions, a consortium of surgeons would perform an individual meta-analysis on their published data and develop parameters such as axial length at time of surgery, corneal diameter, and presence or absence of fibrin postoperatively, which may define the parameters of the ideal infant eye for implantation.

There is one final issue which is often overlooked and that is surgeon experience. In the studies cited above where outcomes of IOL implantation in children under 2 years of age have been relatively good, the surgeon surgical experience has been high. In a country like India, adult cataract surgeons who also do pediatric cataract surgery, and not pediatric ophthalmologists, are more likely do the majority of pediatric cataracts. Kemmanu *et al*. acknowledge that their survey targeted members of the Indian Strabismus and Paediatric Ophthalmology Society. The results of the survey may have been quite different had the adult surgeons doing the bulk of pediatric cataracts surgery participated.

An interesting finding from the paper by Kemmanu *et al*. is that the majority of IOL's implanted were the hydrophobic acrylic single piece lens. This is an interesting choice because while it is easy to insert, if the posterior capsule were to rupture or be unstable (and this is more likely given the higher incidence of posterior plaques or lenticonus in pediatric cataracts), a one piece foldable lens would not sit well in the sulcus with decentration being a major issue. For this reason, it makes more sense to use the hydrophobic acrylic three piece lens which has been found to be stable in the sulcus.

In closing, a concerted effort to evaluate ALL the data that we already have may lead to some RWD that may help implement better management and surgical strategies for children and especially infants with cataracts.

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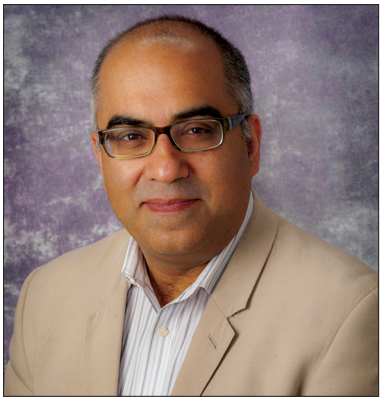

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