

IOLs: A Look at the Past, A Peek at the Future

Happy New Year to our readers! The past few years have been challenging for the majority of European ophthalmologists, and hopefully the worst is behind us. In the world of cataract surgery and IOLs, exciting times lie ahead.

Some of you may have read the November/December 2012 cover focus article, *The Best of 2012: Trends and Breakthroughs in Cataract and Refractive Surgery* (pp 46-62), which featured technology and hardware that has helped ophthalmologists take cataract and refractive surgery to new levels of safety and efficacy. In that article, 11 companies and the surgeons they hand-selected shared their views on these technologies. What you do not know is how many companies were keener to discuss IOLs. Clearly this illustrates the excitement that these companies have for the IOLs in their pipelines. This topic is the focus of our first issue in 2013, the *Annual IOL Issue*.

Pioneers such as Sir Harold Ridley and Charles D. Kelman, MD, could not have predicted the pace at which IOL technology and accompanying innovations have developed. It is now common for cataract surgeons to implant toric, multifocal, or accommodating IOLs, whereas just a few years ago these lenses were predominantly used by refractive surgeons. As time goes by and technologies advance, their use will become even more widespread.

As impressive as the advances and innovations in IOL technology have been, both service providers and patients are awaiting the day when a dysfunctional, cloudy crystalline lens can be replaced with a fully functional, accommodating IOL resembling the optical system we enjoyed in our 30s. We are not quite there yet, but it is certainly not for lack of trying.

This issue highlights just how many new IOLs are available and how promising the results have become. Surgeons from Europe, the United States, and Asia contribute to this issue, thereby highlighting the regional differences in IOL approvals and use. What I find interesting is that not a single IOL seems to dominate today's market—in any country. Among the contributing authors, the adoption of premium IOLs and laser cataract surgery also varies among regions (5% to 70% and 20% to 90%, respectively). The costs of the IOL and the procedure, as well as local reimbursement regulations, seem to have a big impact on final decisions. When a significant variety of solutions exist, it is my experience that the

ultimate solution is not yet available. When it does finally arrive, it will dominate the market to a greater extent than any IOL currently dominates the market.

In 1977, an editorial in the *British Journal of Ophthalmology* discussed the concept that, even though 50,000 IOLs in the United States and 10,000 in Europe had been implanted, perhaps the safest way to deal with aphakia was contact lenses.¹ In 1989, another editorial in the same journal showed that the consensus had swung to favoring IOL implantation in the majority of cases.² If that same question were to be asked now, it would be met with incredulity, as the safety of IOLs is not even a consideration for most ophthalmologists today.

The number of elderly in Europe—and in fact worldwide—is growing. In Ireland, the numbers are quite alarming, and more patients are going to require cataract surgery in the near future. Additionally, with rising patient demands, we are bound to implant an increasing number of premium IOLs.

However, increasing patient demands are only one part of the challenge; the

other is cost. Health budgets are being cut across Europe, and we must prepare to provide a better service to more patients on smaller budgets. This will require some innovative economic and sociopolitical engineering.

Even standard IOLs provide patients with excellent postoperative outcomes. Until recently, patients in third-world countries who underwent treatment during cataract missions were left aphakic and received plus 10.00 or 12.00 D glasses the next morning. Today, IOLs are implanted in almost all of these cases, as they have become more affordable without a proportionate drop in quality. In 2000, David F. Chang, MD, asked the question, "Is there truly a clinical difference in intraocular lenses available today?"³ Today, the question is no longer about safety but rather IOL choice. This question may be harder to answer than those that were asked before. ■



**Arthur B. Cummings, MB ChB,
FCS(SA), MMed (Ophth), FRCS(Edin)**
Associate Chief Medical Editor

1. Current status of intraocular lenses. *Br J Ophthalmol.* 1977;61:307-309.

2. How safe are intraocular lenses? *Br J Ophthalmol.* 1989;73:937-938.

3. Chang DF. Is there truly a clinical difference in intraocular lenses available today? *Compr Ophthalmol Update.* 2000;1(1).