By the time I completed my first few cases with the AcrySof Toric IOL (Alcon Laboratories, Inc., Fort Worth, TX), I was convinced that it was the best vision-correction option for cataract patients with moderate-to-severe preoperative corneal astigmatism. This lens gives me the ability to accurately and predictably provide excellent uncorrected distance UCVA for a group of patients who have lived without such vision for years. For an experienced cataract surgeon, the lens is easy to implant and produces excellent outcomes in the very first case. My patients have been effusive about their results. I believe the lens generates a “wow” factor that is unparalleled in cataract surgery.

**MY FIRST SERIES OF CONSECUTIVE EYES**

In a phase 3 clinical study evaluating the AcrySof Toric IOL, 94% of patients implanted with the lens (n = 37) achieved a distance UCVA of 20/40 or better.1 The study also evaluated the rotational stability of the lens, which of course is crucial to the effectiveness of a toric design. At 6 months after implantation, the mean rotation was less than 4º.

For other key results from the clinical study, see *Highlights From the AcrySof Toric IOL Phase 3 Clinical Study*. However, I think the results from my first 55 consecutive eyes are even more interesting. They illustrate how quickly quality outcomes can be achieved with this lens.

My series included each of the three models of the lens: the SN60T3, SN60T4, and SN60T5. These lenses are available

<table>
<thead>
<tr>
<th>Model</th>
<th>No. of Patients Implanted</th>
<th>Average Preoperative Corneal Cylinder</th>
<th>Average Postoperative Uncorrected Distance Vision</th>
</tr>
</thead>
<tbody>
<tr>
<td>SN60T3</td>
<td>23</td>
<td>+1.16 D</td>
<td>20/22</td>
</tr>
<tr>
<td>SN60T4</td>
<td>8</td>
<td>+1.77 D</td>
<td>20/25</td>
</tr>
<tr>
<td>SN60T5</td>
<td>15</td>
<td>+2.58 D</td>
<td>20/25</td>
</tr>
</tbody>
</table>

“I believe the lens generates a ‘wow’ factor that is unparalleled in cataract surgery.”
in powers of +6.00 through +34.00 D in 0.50 D increments. I excluded nine eyes from the data analysis, because they were not expected to achieve 20/40 or better distance UCVA due to planned monovision (an intended myopic result) or known preexisting macular pathology that would preclude normal vision (Table 1).

USING THE INCISION’S PLACEMENT TO FINE-TUNE OUTCOMES

At the time of this writing, I have implanted about 200 AcrySof Toric IOLs with similarly solid results to my first series. One important key to my success with this lens is using the online AcrySof Toric IOL Calculator (http://www.acrysoftoriccalculator.com) that the manufacturer provides. It is simple to use and accurately predicts outcomes by compensating for surgically induced astigmatism using vector analysis to adjust both the magnitude and axis of astigmatism. The surgeon determines the proper spherical power of the IOL for the operative eye and enters it into the calculator along with the patient’s keratometric (K) values, expected induced astigmatism (default, 0.50 D), and location of the incision. With this information, the calculator determines the most appropriate cylindrical power of the lens (ie, the model T3, T4, or T5) and, axis of implantation. In addition, the calculator has recently been enhanced to show the amount and location of the anticipated residual astigmatism following the lens implantation.

In my experience, some residual cylinder with the AcrySof Toric IOL does not usually bother patients. For example, a patient who had 3.00 D of preoperative cylinder tends to be very happy with 0.75 D of cylinder and a UCVA of 20/25 or 20/30 postoperatively. Nevertheless, I take advantage of the fact that the online toric calculator easily allows me to improve upon the suggested outcome by changing the incision’s location.

Critical to the overall precision of the AcrySof Toric IOL’s calculations is the compensation for surgically induced astigmatism. Few if any incisions are astigmatically neutral. With this lens, moving the axis of the inci-

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**HIGHLIGHTS FROM THE ACRYSOFT TORIC IOL PHASE 3 CLINICAL STUDY**

In the phase 3 multicenter, randomized, parallel-group study (N = 494) of the AcrySof Toric IOL, 244 patients were implanted with the toric lens, and 250 patients who were implanted with the AcrySof SA60AT Spherical IOL served as controls. Of the 244 patients implanted with the toric lens, 123 received a model SA60T3, 67 received a model SA60T4, and 54 received a model SA60T5 (now marketed as SN60T3, SN60T4, and SN60T5, with the addition of blue-light–blocking properties). Some of the results were as follows:

- Approximately 60% of the toric lens patients unilaterally implanted reported achieving spectacle independence for distance vision compared with 38% in the control group;

- Of the patients who underwent bilateral IOL implantation, 97% of the 37 toric lens patients achieved spectacle freedom for distance vision compared with 50% of the 22 control patients;

- Of the patients implanted with the toric IOL, 38.4% achieved a distance UCVA of 20/20 or better compared with 19% of those implanted with the SA60AT lens;

- Residual refractive cylindrical values were statistically significantly lower among the patients implanted with the toric lens;

- Each of the three toric lens models was associated with at least a threelfold increase in the likelihood of achieving residual refractive cylinder of 0.50 D or less compared with the control lens; and

- Patients who received the toric lens exhibited stability of cylinder, with more than 90% of them experiencing a change of less than or equal to 1.00 D between 1 and 12 months.
Intraoperative Precision Points

It is important to note that the AcrySof Toric IOL should not be implanted unless the posterior capsule is intact. The lens has no three-piece sulcus option.

In addition, this lens is not ideal for surgeons who cannot reliably produce a 5.0-5.5-mm continuous curvilinear capsulorhexis. This procedure should be symmetrical to foster stability and the “shrink wrap” effect. If it is too small, capsular contraction syndrome could occur; if the continuous curvilinear capsulorhexis is too large, IOL capture could occur as the capsule shrinks. I find a bent 25-gauge needle ideal for creating this.

Finally, surgical precision is of the utmost importance when aligning the IOL at the intended axis of placement. Before the lens is fully unfolded in the capsular bag, it should be grossly aligned. Using the three-dot registration marks near each haptic/optic junction, the surgeon should rotate the lens to a position approximately 15º counterclockwise from the final axial location. At this point, all viscoelastic should be removed from the anterior and posterior sides of the lens, because trapped viscoelastic could cause the IOL to rotate postoperatively. When this step is complete, final alignment can be accomplished using a variety of instruments. I prefer the straight silicone tip on the I/A handpiece, which allows me to maneuver the acrylic lens easily.

Help Patients Make the Best Choice

As I have incorporated all of the latest premium IOLs into my practice, it has become clear that patients overwhelmingly choose the option that will give them the best outcomes, regardless of cost. I have no doubt that the AcrySof Toric IOL is the best choice for many patients who have significant preoperative corneal astigmatism. Patients who select this lens are among the happiest and most satisfied in my surgical practice.

David Marshburn, DO, practices at Marshburn Eye Center in Whittier, California. He acknowledged no financial interest in the products or companies mentioned herein. Dr. Marshburn may be reached at (562) 947-8681; david@marshburneye.com.

Because of the AcrySof® IQ Toric IOL technology Zeiter Eye Medical Group offers cataract patients with pre-existing astigmatism precise vision correction to reduce or eliminate corneal astigmatism and deliver significantly improved distance vision without the need for glasses or contacts. You’ll also enjoy an improved image quality thanks to the lens™ new aspheric design. This AcrySof® IQ Toric IOL lens can help provide you with clear, vibrant and in-focus distance vision, all with just one lens. A Leap Forward in Enhanced Clarity and Image Quality. The Problem: Spherical Aberration. AcrySof IQ Toric IOL (Alcon Labs, USA) The FDA also approved the AcrySof toric IOL in September 2005. Different models (T3 to T9) of AcrySof toric IOL can correct significant amount of astigmatism. This lens also is available in aspheric versions for crisper vision. Different models also can filter potentially damaging UV or blue light. The AcrySof Toric IOL is based on the AcrySof Natural single-piece platform (Alcon Laboratories, Inc.) and is a foldable lens with a fully functional, 6-mm toric optic and Stableforce haptics (Alcon Laboratories, Inc.). The lens’ acrylic material is highly biocompatible and has adhesive properties that, along with the haptic design, help to prevent rotation of the IOL after its implantation in the capsular bag. The AcrySof toric IOL (tIOL) became available in Canada in 2006, thereby giving surgeons another option in the correction of astigmatism during cataract surgery. The purpose of this paper is to report the early experience of the acrylic AcrySof tIOL. Observational clinical study. One hundred eleven eyes, including 41 bilateral patients. Patients were implanted with the AcrySof tIOL by 1 surgeon between April and September 2007. The eyes were followed for 6 months and pre- and postrefractive outcomes were summarized. Preoperatively, the mean refractive cylinder was -1.25 D compared with -0.32 D postoperative. At 6 months, 95.5% of eyes remained within 10 degrees of planned axis. Early experience with the AcrySof toric IOL for the correction of astigmatism in cataract surgery. Can J Ophthalmol. 2009; 44: 269-273. A study comparing the visual acuities of the TECNIS ZCTXXX and AcrySof SN60AT toric IOLs reported a mean UCDVA of 0.12±0.06 logMAR (Snellen equivalent, 20/26) and 0.13±0.10 logMAR (Snellen equivalent, 20/27) for the ZCTXXX and SN6AT groups, respectively. 28. Ferreira T.B. Almeida A. Comparison of the visual outcomes and OPD-scan results of AMO Tecnis toric and Alcon AcrySof IQ toric intraocular lenses. J Refract Surg. 2012; 28: 551-555.