

Study Spotlight: Visual performance and patient-reported outcomes with AT ELANA®



Seeing beyond

ZEISS AT ELANA demonstrates very good visual performance, accurate refractive outcomes and high level of satisfaction with minimal visual disturbances

Source



Title
First Clinical Results of a Multicentric Prospective Study on the Visual Performance of Patients Implanted with a New Trifocal Aspheric Hydrophobic Intraocular Lens



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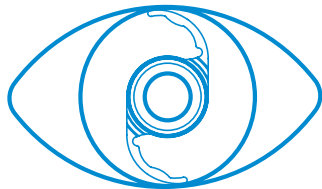
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Methodology

58 patients undergoing bilateral cataract or refractive lens exchange surgery

- Prospective, multi-center (2 sites in Germany, 1 site in Spain), open-label clinical study
 - Postoperative assessments at 1 and 3 months: Monocular corrected distance visual acuity (CDVA), binocular corrected/uncorrected visual acuities for distance (CDVA, UDVA), intermediate (DCIVA/UIVA at 66 cm and 80cm), and near (DCNVA/UNVA at 40cm and preferred reading distance)
 - Monocular and binocular photopic defocus curves from +2.00D to -4.50D in 0.50D steps
 - Binocular contrast sensitivity with/without glare under photopic and mesopic conditions
 - AIOLIS questionnaires on patient satisfaction, visual symptoms, and spectacle use

Sample size



58 patients/ 116 eyes
Mean age: 64.8 years
Exclusion: Pre-op corneal astigmatism ≥ 1.00

Results

Refraction & Visual Acuity (VA)

At 3 months post-operatively, the mean spherical equivalent (SE) was $0.20 \pm 0.39D$, with **83.3% of eyes within $\pm 0.50D$** of SE target refraction illustrating high refractive accuracy.

Monocular CDVA was -0.03 ± 0.10 while mean **binocular corrected and uncorrected visual acuities** in all distances were **very good** as shown in table 1.

Binocular Visual Acuity	Values
UDVA/CDVA	$-0.04 \pm 0.10 / -0.09 \pm 0.08$
UIVA/DCIVA (80cm)	$0.08 \pm 0.16 / 0.05 \pm 0.10$
UIVA/DCIVA (66cm)	$0.04 \pm 0.10 / 0.05 \pm 0.10$
UNVA/DCNVA (40cm)	$0.14 \pm 0.12 / 0.11 \pm 0.12$
UNVA/DCNVA (at preferred reading distance)	$0.10 \pm 0.13 / 0.08 \pm 0.11$
Preferred reading distance (cm)	40.44 ± 4.22

Table 1: Visual acuity outcomes (logMAR) at 3-months follow-up visit (shown as means $\pm$ standard deviations)

Defocus Curve Performance

The binocular best distance-corrected defocus curve (figure 1) showed a slight improvement from 1 to 3 months between the ranges of -1.5 to -2.5D. The **depth of focus** from 0D was about **3D** at 3 months indicating **a very good continuous range of vision from far to near**.

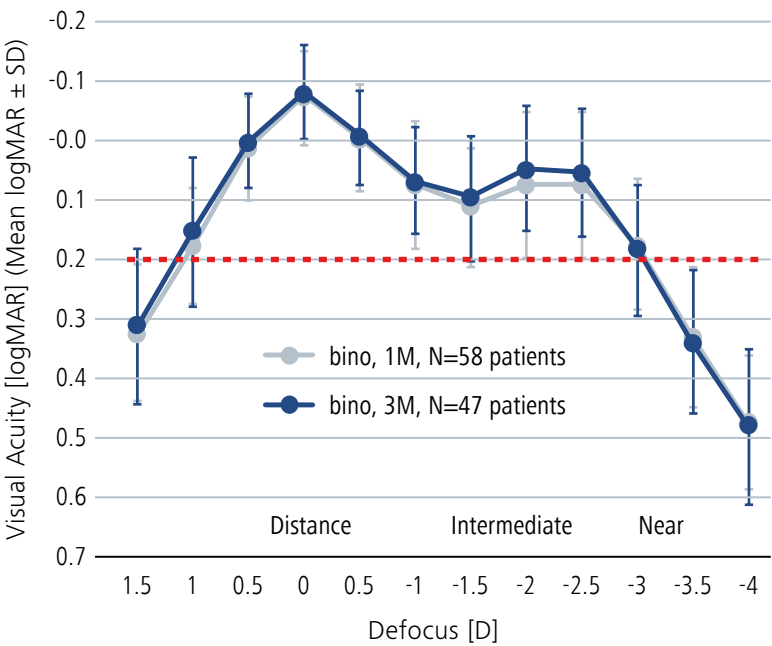


Figure 1: Photopic binocular defocus curve at 1 and 3 months (logMAR)

Patient-reported outcomes (AIOLIS questionnaires)

High level of satisfaction with 87.2% of patients reporting being completely, very or somewhat satisfied with their current vision (figure 2) and spectacle independence rate of 85.1%. At 3 months **93.5% of patients** were able **to see perfectly, very or pretty well without glasses** (figure 3).

At 3 months, close to 60% of patients reported to never or sometimes experience halos. **Only 6.4%** reported **halos to be quite bothersome** and 4.3% as extremely bothersome (figure 4).

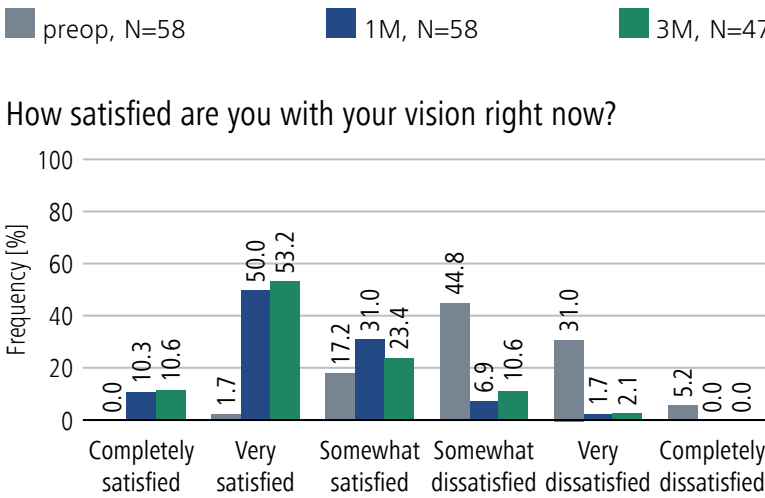


Figure 2: Patient-reported satisfaction with vision before and after surgery

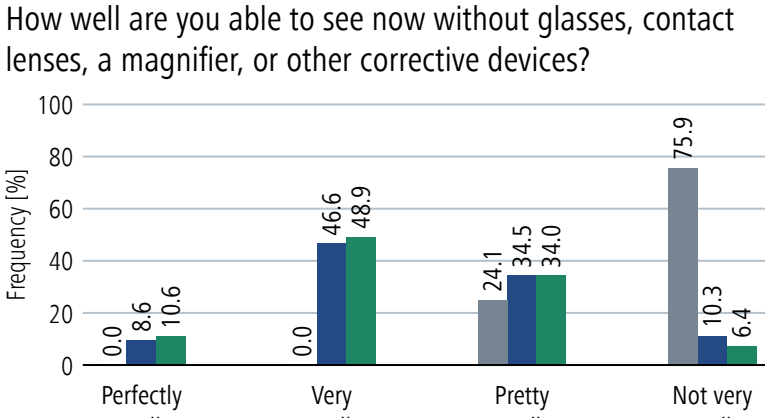


Figure 3: Patient-reported vision without glasses before and after surgery

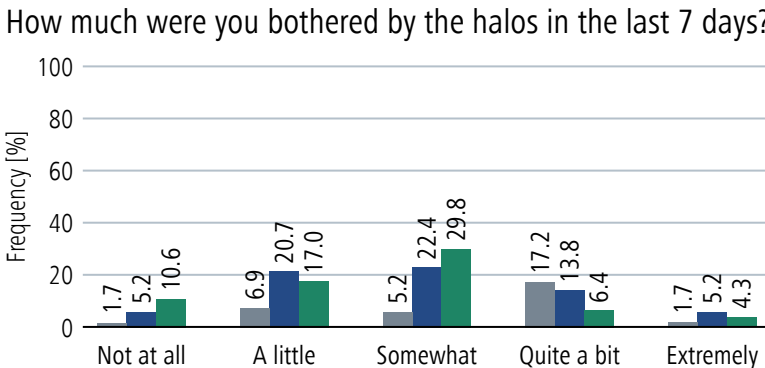


Figure 4: Halo questionnaire before and after surgery