

ASTIGMATISM MANAGEMENT WITH ARCUATE INCISIONS CREATED WITH A NOVEL, DUAL PULSE FEMTOSECOND LASER SYSTEM

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DISCLOSURES



INTRODUCTION

- Addressing astigmatism at the time of surgery positively influences patients' visual performance.
- Femtosecond laser-assisted arcuate keratotomy (FSAK) for correcting low levels of astigmatism during cataract surgery has been found to be safe, accurate, and effective.
 - Femtosecond laser-assisted incisions are created at a precise depth, arc length, and location, which significantly improves the predictability of corneal astigmatism correction.
- ALLY femtosecond laser (LENSAR) is a dual-pulse laser with 6 fixed Scheimpflug cameras that allow faster imaging and makes the femto procedure 2-4 times faster than the previous generation laser.
- Iris registration-guided arcuate incisions created with the ALLY femtosecond laser are precise and reliable, allowing surgeons to deliver excellent outcomes.

PURPOSE

- To evaluate the astigmatic outcomes of arcuate incisions created by a dual-pulse femtosecond laser that uses 1500 fs pulse-width to fragment the lens and 320 fs pulse-width to cut the cornea in patients undergoing cataract surgery or refractive lens exchange (RLE).

METHODS

Study design:
Retrospective
chart review.

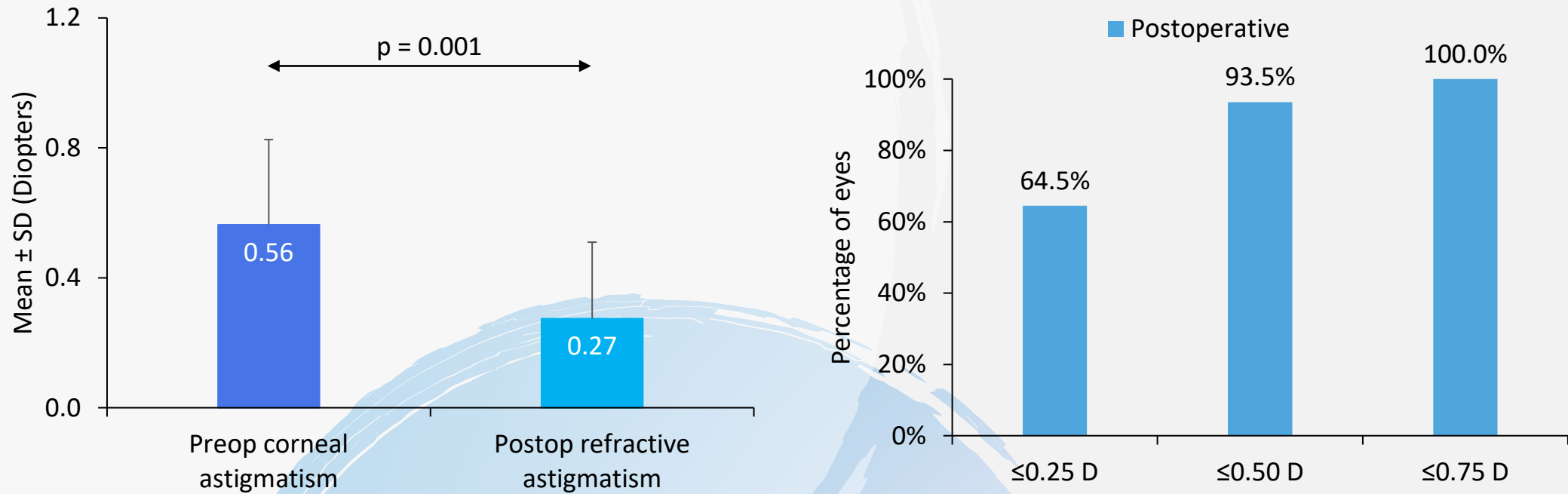
Study population:
31 eyes that underwent cataract
extraction or RLE and
astigmatism correction with AI
using the ALLY system and the
Visco AI nomogram.

Outcome measures:
MRSE, UDVA and vector analysis.

Inclusion criteria:
Patients ≥ 21 years with pre-
existing regular corneal
astigmatism up to 1.25 D;
expected visual acuity of at least
20/25 and clear cornea.

RESULTS

Preop corneal vs postop refractive astigmatism

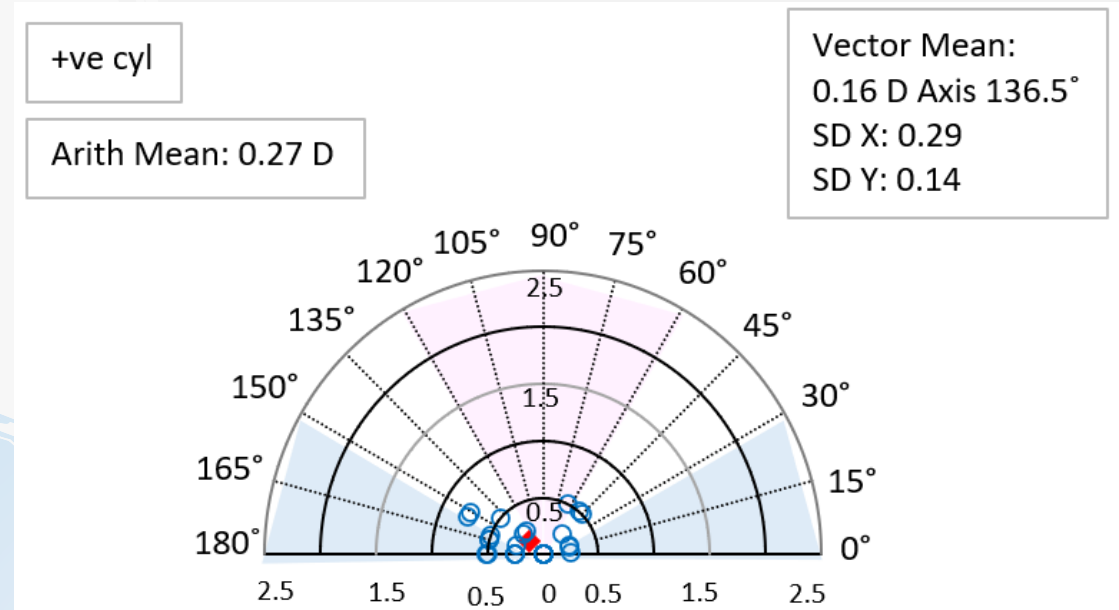
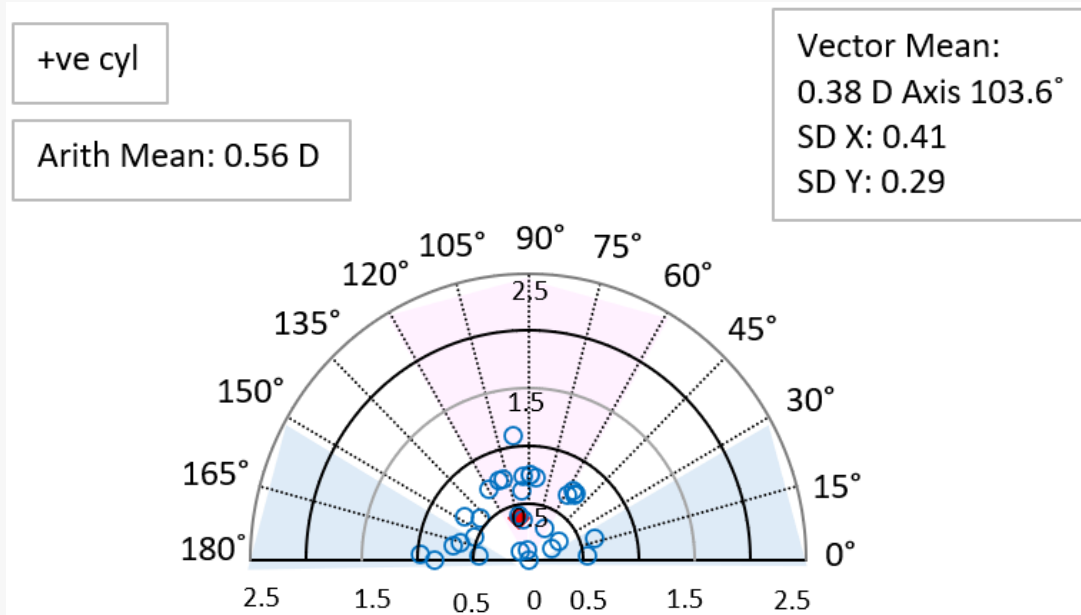


With a statistically significant reduction in astigmatism from preop to postop, 65% and 94% of eyes achieved a refractive cylinder within 0.25 and 0.50 D, respectively.

RESULTS

Preoperative corneal astigmatism

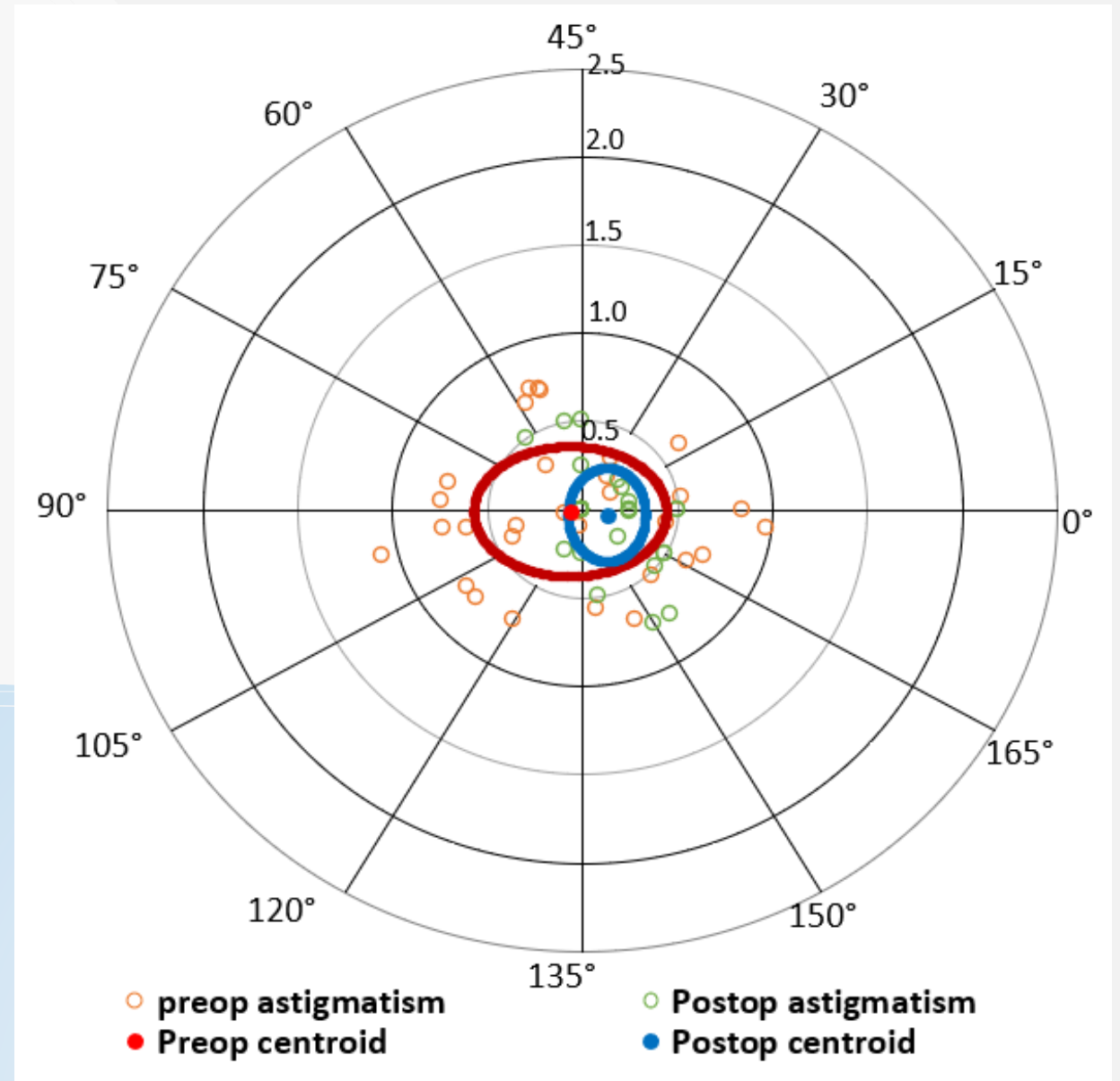
Postoperative refractive astigmatism



Vectoral mean of astigmatism decreased from 0.38 D preoperatively to 0.16 D postoperatively.

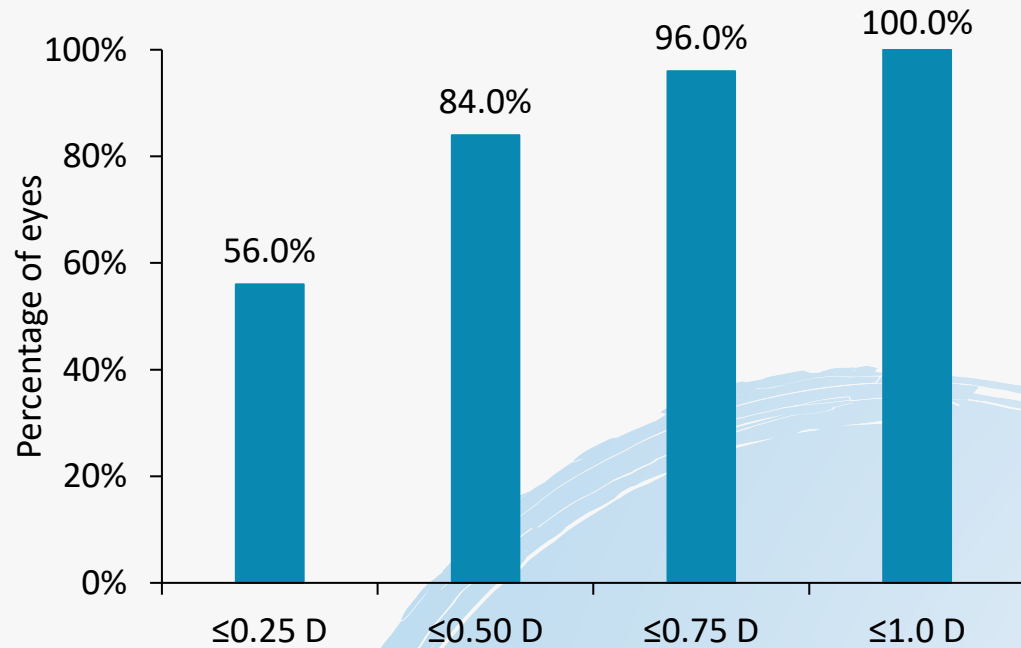
RESULTS

- Centroid of postop astigmatism was closer to 0.0 D and had a smaller vectoral standard deviation (represented by ellipse).

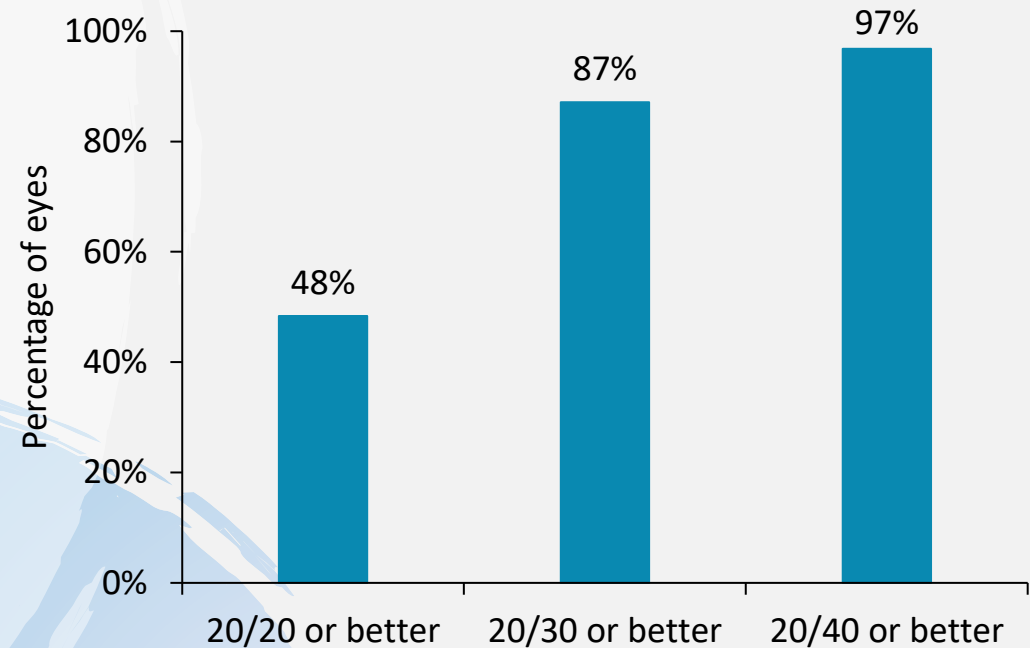


RESULTS

Postoperative MRSE
Mean: -0.01 ± 0.42 D



Postoperative UDVA
Mean: 0.09 ± 0.22 logMAR



Postoperatively, 84% of eyes had MRSE within 0.5 D, and 87% of eyes achieved UDVA of 20/30 or better.

DISCUSSION

Non-sterile GEN1 FLACS Procedure



- **Total FLACS + Transition Time: 8:03**

ALLY FLACS Sterile Procedure



- **Total FLACS + Transition Time: 3:20**

- Sterile next-generation FLACS for astigmatism management is the most efficient workflow at Eyes of York saving nearly five minutes and no manual marking the patient's eye.



THANK
YOU