ESCRS MILAN 2022
40th Congress of the ESCRS
16-20 September 2022

Rotational Stability Of Two Identical Design And Material Intraocular Lenses But Different Surface Treatment

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Disclosure for Gilles Lesieur

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Grant / Research Support	No relevant conflicts of interest to declare.
Consultant	Carl Zeiss Meditec
Employee	No relevant conflicts of interest to declare.
Paid Instructor	No relevant conflicts of interest to declare.
Speaker Bureau	No relevant conflicts of interest to declare.
Other	Royalties for BVI and Rumex instrumentation

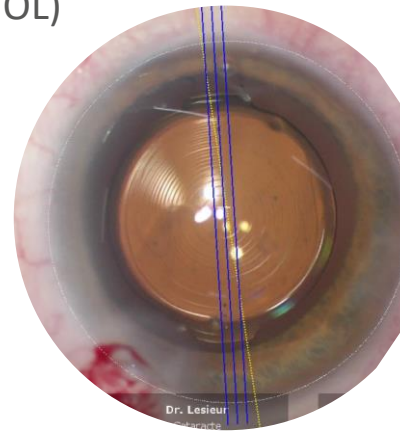
Paul Dupeyre has no financial interest in any of the mentioned products or methods

Purpose

• To study the postoperative **rotational stability** of two toric intraocular lenses (TIOL) with the same design and material,

• **But of different surfaces treatment** : **Polished** vs **Unpolished**

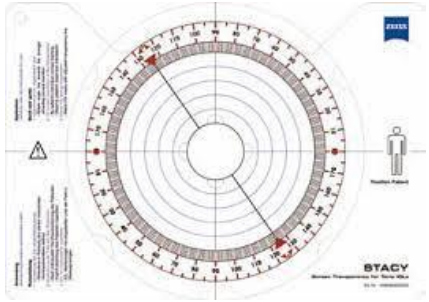
Ankoris vs Finevision Toric
(BVI, Belgium)



• All surgeries were performed by **the same surgeon** (GL)

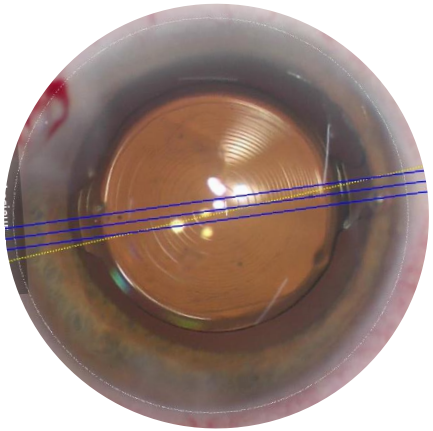
• Rotational stability, patient's demographic and biometric data were retrospectively compared

Methods

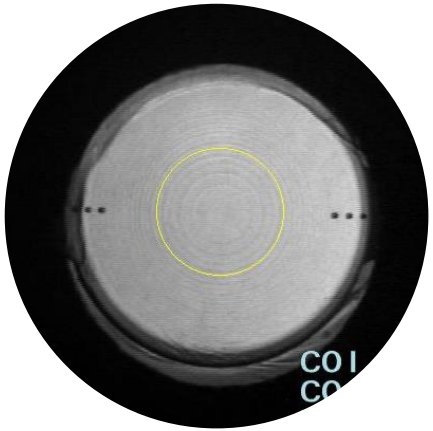


• All patients implanted since 2018 with
- a **polished** monofocal Toric IOL (**Ankoris, BVI, Belgium**) or,
- an **unpolished** Toric multifocal IOL (**FineVision Toric, BVI, Belgium**) were enrolled

• Measurement of the postoperative axis **under dilation** at follow-up 1 to 3 months after surgery (STACY CZM protractor on retro illumination picture)



Peroperative

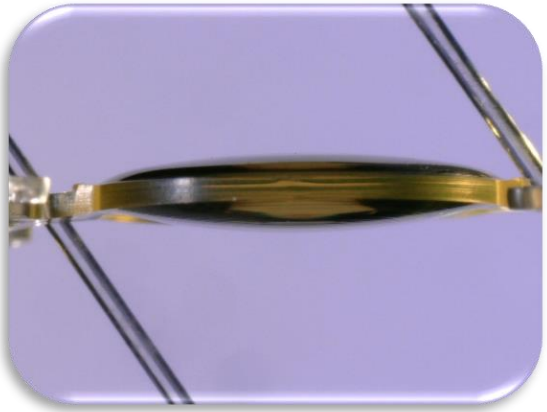


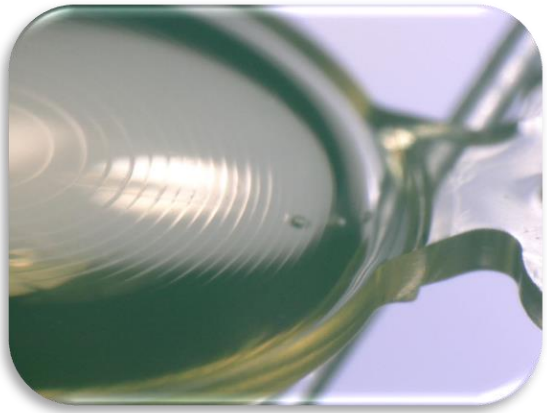
1 month follow-up

Rotation

	Ankoris	Finevision Toric
Model	Ankoris	POD FT
Material	26% Hydrophilic Acrylic	
Overall diameter	11.40mm	
Optic diameter	6.00mm	
Optic	Biconvex Aspheric Toric	Biconvex Aspheric Toric Trifocal
Haptic design	Double C-loop & Posterior Angulated Haptic 5°	
Filtration	UV & Blue Light	
Refractive index	1.46	
Abbe number	58	
Polished	YES	NO

Polished





Unpolished

Number of inclusions

297
Ankoris

(polished)

278
Finevision Toric

(unpolished)

Results

Demographic & biometric data

Mean ± SD	Ankoris	FineVision Toric	P value
Age (years)	75,55 ± 9,03	63,05 ± 8,29	<0,001*
Gender (% female)	45%	58%	0,001*
Axial Length (mm)	24,01 ± 1,36	23,82 ± 1,20	0,08
Average Keratometry (D)	43,25 ± 1,46	43,60 ± 1,57	0,01*
TK (D) IOLMaster 700 (CZM)	1,28 ± 0,73	1,01 ± 0,65	<0,001*
ACD (mm)	3,13 ± 0,38	3,21 ± 0,34	0,019*
LT (mm)	4,73 ± 0,43	4,45 ± 0,39	<0,001*
WTW (mm)	12,16 ± 0,38	12,06 ± 0,41	0,005*
IOL Power (D)	21,05 ± 3,76	20,61 ± 3,19	0,14
IOL Cylinder (D)	1,96 ± 0,74	1,39 ± 0,68	<0,001*

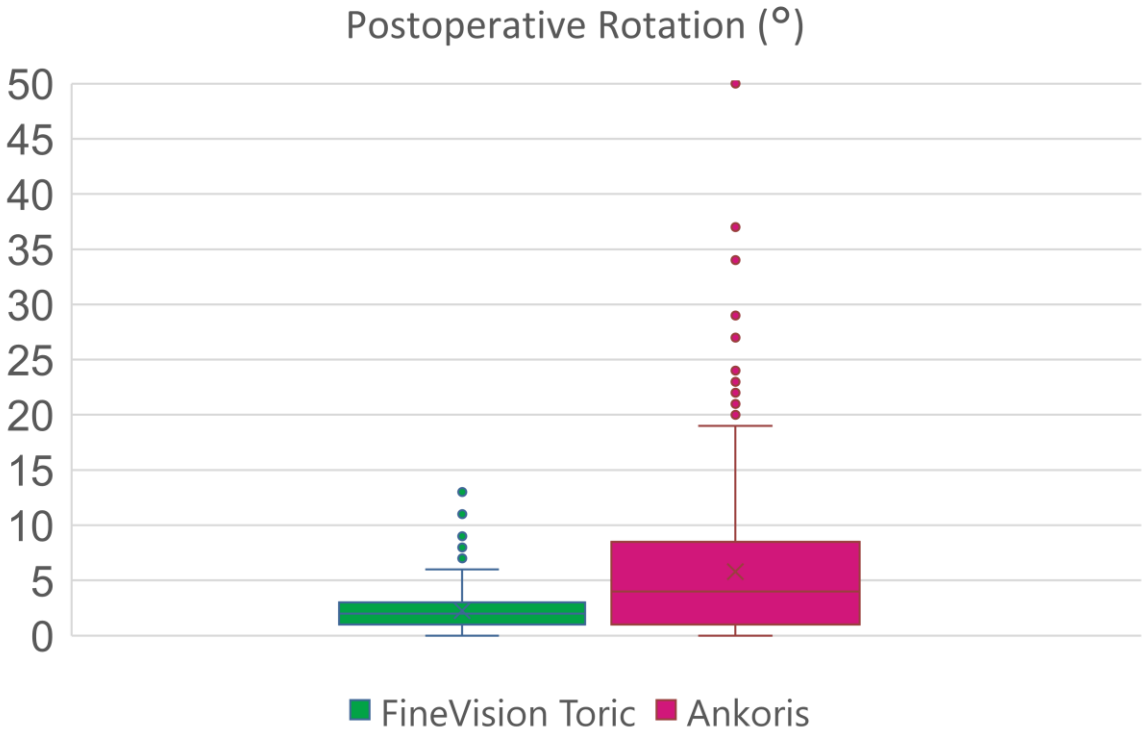
Results – Postoperative Rotation

Better **stability** for unpolished IOL

	Ankoris	Finevision Toric	P value
N	297	278	
Mean (°)	5,81	2,25	<0,001*
STD ± (°)	6,91	2,18	
Median (°)	4	2	
Min (°)	0	0	
Max (°)	50	13	

Significantly less “high rotation” for the Finevision Toric

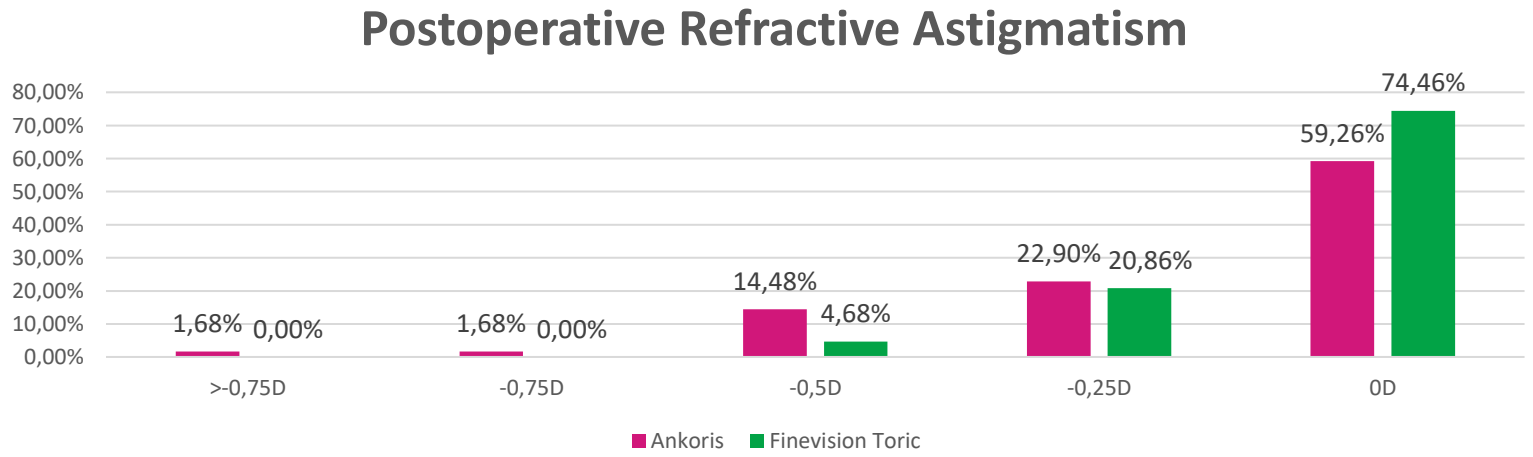
Results – Postoperative Rotation – Box Plot



Results – Postoperative refraction

Better **postoperative refractive astigmatism** for the unpolished IOL

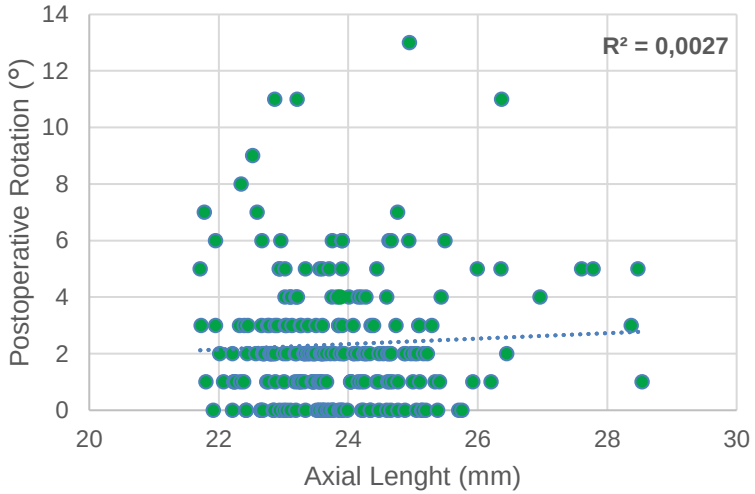
	Ankoris	Finevision Toric	P value
N	297	278	
Mean (D)	**-0,16**	**-0,08**	**<0,001***
STD ± (D)	0,25	0,14	

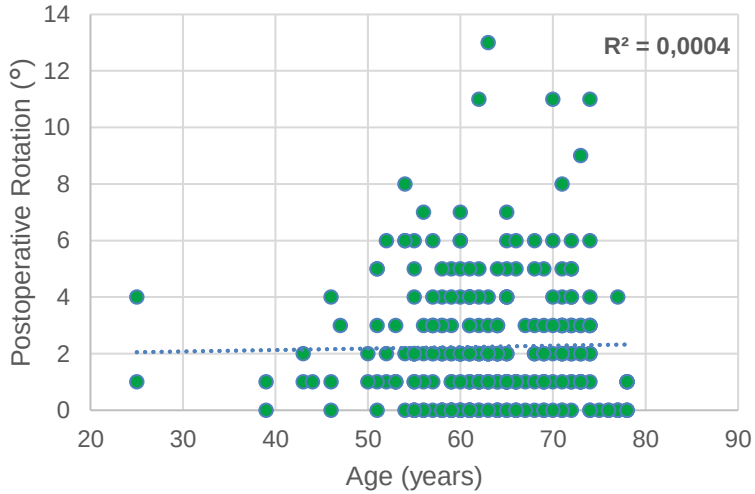


Results – Rotation & Correlation

- **No correlation** between postoperative rotations and **age**, or **any biometric parameters** was found for both groups

Example for Age and AL (Finevision Toric group):





Conclusion

- In this study, multifocal IOL showed **better rotational stability** than the monofocal IOL
- The only difference is the **unpolished surface** of the multifocal IOL (Finevision Toric)
- **Not polishing the IOLs** seems to be a predominant factor for rotational stability
- This has already been highlighted in **Vandekerckhove*** article which compared these same implants
- Manufacturers, like Johnson & Johnson, are even starting to take this into account with **frosted haptics** of the new TECNIS Eyhance Toric II

*Vandekerckhove K. Rotational stability of monofocal and trifocal intraocular lenses with identical design and material but different surface treatment. J Refract Surg. 2018;34(2):84-91

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Thank you for your attention