Comment on: Associations between anterior segment parameters and rotational stability of a plate-haptic toric intraocular lens

The recent article by Yao et al. has caught our attention.[1] After publication of the article by Erb-Eigner et al., we conducted a correlation analysis study between the postoperative rotations of the AT TORBI 709M (CZM) intraocular lens (IOL) and preoperative biometric measurements, including white-to-white (WTW) distance.[2] The results on 285 IOLs showed no correlation (Pearson's $r < 0.03$), which is in contradiction with the aforementioned article.

The objective of this letter is not to contradict the results of the study by Yao et al. but rather to bring the results of several years of reflections on the stability of toric IOLs and the internal analyzes on our results.

In addition, we analyzed a multifocal IOL (mIOL) vs a monofocal IOL with the same double C-loop design (FineVision Toric vs Ankoris, BVI). The mean postoperative rotations were 2.39 ± 2.35 degrees for the mIOL group (n = 148) and 6.64 ± 6.31 degrees for the monofocal group (n = 259). Morover, the significant rotations observed were lower for the mIOL group with a maximum at 13 degrees vs 37 degrees for the monofocal group. Less rotation was observed with the mIOL, likely due to its manufacturing process and the unpolished diffractive lens, as mentioned by Vandekerckhove.[3] Finally, since 2020 we have been using a new unpolished hydrophilic toric IOL (Lucidis 124MT, SAV-IOL) with an overall size of 12.4 mm and a great improvement in stability (Table 1).

We understand the observations of Yao et al. and, particularly, that the current lack of technology to know the true size of the bag remains the main concern to increase the stability of the toric IOLs. Nevertheless, it seems that no biometric parameter can predict a potential rotation in the capsular bag, whereas an unpolished IOL of more than 12 mm can improve stability for the patient and the surgeon.

Gilles Lesieur, MD, Paul Dupeyre, MSc

From the Centre IRIDIS, Albi, France.

Corresponding author: Gilles Lesieur, MD, Centre Iridis, 32 Place Jean Jaurès, 81000 Albi, France. Email: g.lesieur@centre-iridis.fr.

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Reply: Associations between anterior segment parameters and rotational stability of a plate-haptic toric intraocular lens.

We thank Lesieur and Dupeyre for their comments and sharing results on the rotational stability of several IOLs.

First, this retrospective study of 102 consecutive patients was conducted under strict inclusion and exclusion criteria to reduce individual heterogeneity. All surgeries were performed by 1 experienced doctor (Y.L.) to minimize the influence of potential confounding factors. Under such conditions, we came to a reliable conclusion that among our patients, the rotational stability of the plate-haptic IOL was associated with WTW distance and anterior segment length and speculated that these 2 parameters might, to a certain extent, represent anterior segment dimensions and thus reflect the size of capsular bag. The findings of this study have already been applied to our clinical work and have helped in selecting suitable patients and preoperative communications. Specifically, patients with WTW distance larger than the empirical cutoff value 11.8 mm would be treated more cautiously and informed of the increased risk of postoperative IOL rotation. This was further confirmed in our following clinical practice.

Second, the difference in correlation results between our study and that of eLesieur might result from ethnic differences in ocular biological parameter distribution and clinical heterogeneity of patients. An Italian study of a small sample reported similar results, where no correlation was found between AT TORBI 709M toric IOL rotation and WTW distance among myopic eyes with a mean WTW distance of 11.84 mm.[1] However, in our study, the mean WTW distance was obviously smaller (11.62 mm), and the axial length range was larger (21.71 to 34.60 mm). Our previous study based on 39 986 Chinese cataractous eyes also suggested an obviously smaller WTW distance compared with that of Western populations.[2] Besides, as we do not know what biometry methods were used in

Table 1. Postoperative rotation at 3 months of 4 toric IOLs.

Group	AT TORBI 709M (CZM)	Ankoris (BVI)	Synthesis toric (cutting edge)	Lucidis 124MT (SAV-IOL)
N	285	259	30	113
Mean (°)	3.93	6.64	16.20	2.77
SD (°)	5.36	6.31	19.96	2.55
Median (°)	2	5	6.5	2
Min (°)	0	0	0	0
Max (°)	39	37	74	11