

Assessment of Preoperative Risk Factors for Post-LASIK Ectasia Development [Letter]

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Dear editor

We read with enthusiasm the article “Assessment of Preoperative Risk Factors for Post-Lasik Ectasia Development” by El-Naggar MT et al.¹ The authors retrospectively analyzed a cohort of patients who underwent LASIK surgery for the correction of myopia and/or astigmatism whom developed secondary corneal ectasia (n=24).² In order to identify the performance as preoperative diagnostic tests, the authors applied known combined screening diagnostic tests to identify eyes that were not in a suitable condition to have undergone surgery. Among them, they used Belin-Ambrosio Display (BAD-D), ectasia risk score system (ERSS), Navarro index for corneal ectasia (NICE index),³ Pentacam random forest index (PRFI)⁴ and the Percentage tissue altered (PTA) reporting the proportion of eyes identified by each of them as not ideal candidates for LASIK surgery.

We agree with the authors on the importance of an exhaustive preoperative evaluation in refractive surgery using all available diagnostic tools, in a multimodal manner, and including topometric, tomographic and biomechanical evaluations to choose risk-free candidates to avoid post-LASIK ectasia, a devastating surgical complication. The NICE index is a cumulative risk index based on elevation tomography (Pentacam, Oculus, Wetzlar – Germany) and is composed of four parameters derived from the refractive map that includes the steepest keratometry measurement (K2), the central pachymetry (PAQUI), the posterior elevation at the pupillary area (PE) and the inferior-superior corneal asymmetry index (I-S). This diagnostic test classifies patients as not at risk (score of 4) and at risk (score from 5 to 12). No eye assessed can have a score of less than 4 (Table 1). Unfortunately, El-Naggar et al made some inaccuracies calculating the NICE index in the study reporting only 50% of the eyes at risk for LASIK surgery being actually 70.83% (17 out of 24 eyes) (Figure 1), and only 2 eyes (8.2%) were identified in the study to be ruled out for any type of corneal refractive surgery due to the score (NICE > 8). Undoubtedly, the use of all screening diagnostic tests to screen more accurately candidates for LASIK surgery will allow us to quantify objectively the risk to avoid secondary corneal ectasia.

Table 1 NICE Index

NICE (Navarro Index for Corneal Ectasia) Sin Riesgo (4) Con Riesgo (5–12)			
	I	II	III
K2 (D)	<45	45–47	>47
EP (u)	<15	16–17	18o>
PAQUI (u)	>520	520–500	<500
I-S (D)	<1	1–1.4	>1.4

Notes: Adapted with permission from Navarro PI, Torres Y, Bareño J. Índice acumulativo de riesgo para tamizaje de candidatos a cirugía corneal refractiva con excimer laser. Editorial Académica Española EAE 2016. 978-3-639-53,638-6. www.morebooks.de.³

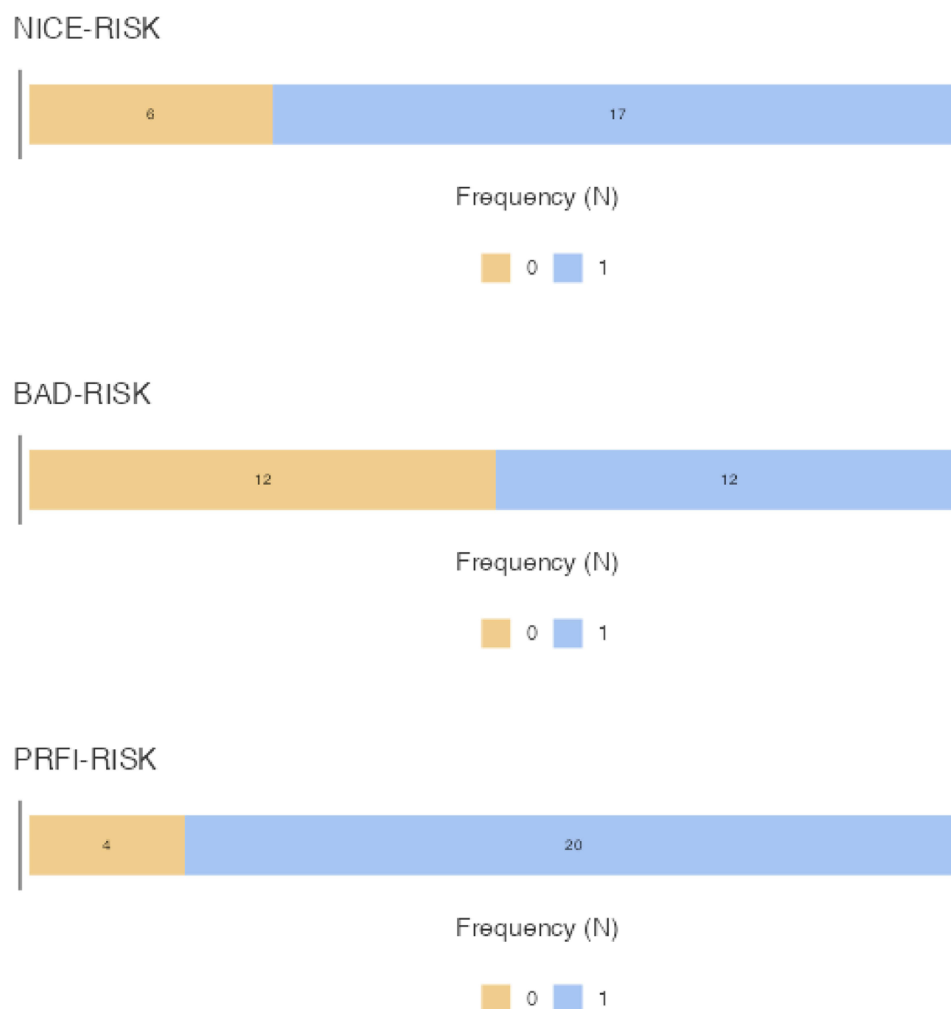


Figure I Frequencies according to NICE, BAD-D and PRFI Indexes (n=24).

Disclosure

The authors report no conflicts of interest in this communication.

References

1. El-Naggar M, Elkitkat R, Ziada H, Pellegrino L, Ambrosio R. Assessment of preoperative risk factors for post-lasik ectasia. *Clin Ophthalmol*. 2023;17:3705–3715. doi:10.2147/OPTH.S425479
2. Randleman JB, Russell B, Ward MA, Thompson KP, Stulting RD. Risk factors and prognosis for corneal ectasia after LASIK. *J Refract Surg*. 2003;110(2):267–275.
3. Navarro PI, Torres Y, Bareño J. Índice acumulativo de riesgo para tamizaje de candidatos a cirugía corneal refractiva con excimer laser. *Editor Acad Españ*. 2016;2016:978.
4. Lopes B, Eliasy A, Ambrosio R. Artificial intelligence in corneal diagnosis: where are we? *Curr Ophthalmol Rep*. 2019;7:204–211. doi:10.1007/s40135-019-00218-9

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