



Comment on “Effectiveness and safety of accelerated (9 mW/cm²) corneal collagen cross-linking for progressive keratoconus: a 24-month follow-up”

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In a study on accelerated corneal collagen cross-linking, the effectiveness and safety of this surgical technique on halting the progression of keratoconus and steadiness of vision over a 24-month period was demonstrated [1]. We congratulate the authors for their remarkable paper and we would like to comment on some aspects concerning the execution of this study.

First, we really appreciated the use of Pentacam instead of ultrasound pachymetry to evaluate corneal thickness. Ultrasound pachymetry, currently considered the gold standard for these measurements, has indeed several limitations: the exact axial placement of the probe at the corneal center and the reproducibility of measurements are strongly associated with the examiner’s expertise and can be influenced by the use of different anesthetic drops during the follow-up examinations. In addition, ultrasound pachymetric measurements are influenced by the amount of corneal water, as in the case of corneal edema or corneal stiffness, because the sound speed is lower in the case of edematous tissues, making such measurements even larger, and higher in the case of stiff tissues, making them even smaller [2].

Furthermore, Pentacam is able to measure both the thinnest central pachymetry (TCP) and the corneal volume, which should be much more sensitive in evaluating eventual keratoconus progression. Indeed, further ectasies and thinning could involve corneal regions different from the thinnest one, and they could be overlooked if TCP alone is evaluated [3].

However, according to the published data, the astigmatic correction seems to have been assessed without taking into account eventual astigmatic axis changes. When the

astigmatic correction needs to be properly estimated, to evaluate the changes in the astigmatic axis is mandatory. A cylindrical correction misalignment will result in a fake astigmatic under correction with a spherical change and the only way to detect such influence is the vector analysis [4].

Last, the authors examined 52 eyes of 48 patients. From this number, it is clear that in some patients, both eyes have been evaluated, while in the others, only one eye has been considered, introducing a bias in this way, decreasing the power of the study [5].

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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