




CORRESPONDENCE

Does progression in keratoconus have to be witnessed by the hospital eye service for it to have occurred?

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We thank O'Brart et al. for their comments on our article regarding the costs, capacity, and clinical implications of waiting for documented progression in young keratoconic patients prior to collagen crosslinking. They argue our 'conclusions are unsupported, raising good medical practice issues' [1]. While we accept their concerns regarding a blanket policy of universal crosslinking, the hypothetical question we raised was based around avoidable costs and delays to these young patients. We clearly stated more research is required to identify parameters at presentation which better identify patients likely to experience progression and so require immediate crosslinking [2, 3].

We wanted to share and raise these philosophical questions—does the ophthalmologist have to witness disease progression before intervention? Who determines progression—the patient or the doctor? [3] There is currently no standardised screening for keratoconus in the UK, a condition that previously had no early interventions. Crosslinking has given new hope to young patients, as mounting evidence shows progression can be arrested and contact lens use and/or corneal transplantation avoided. The recent KERALINK study also entertained discussion on early intervention versus traditional observation [4].

By the time a young patient with keratoconus reaches hospital eye services, there has already been significant progression in their clinical symptoms (visual change prompting self-attendance at optometry services) or clinical signs (changing refraction) leading to referral. Progression has already occurred, yet unwitnessed or undocumented by the hospital. While education regarding the need to cease eye knuckle rubbing behaviour is essential, the role of early crosslinking should be considered [2–5]. A recent review and meta-analysis of the natural progression of 11529 eyes with keratoconus suggested closer follow-up and a lower crosslinking threshold should be adopted in patients <17 years and Kmax >55D [6]. For this to occur, optometrists need appropriate education through referral guidelines and patients require greater and quicker access to tomography. Any overreliance on autorefractors may already be a barrier to identifying abnormal retinoscopy reflexes.

We believe the lifelong cost and visual burden to young patients from delays to referral and limited access to tomography needs to be addressed to optimise the timely delivery of keratoconus services.

REFERENCES

- O'Brart D, Zarei-Ghanavati M, Vasquez-Perez A, Liu C. Comment on: "What are the costs, capacity, and clinical implications of "waiting for documented progression" in young West of Scotland patients prior to collagen cross linking?". Eye. 2021. <https://doi.org/10.1038/s41433-021-01704-w>.
- Simpson A, Brogan K, Ramaesh K, Lockington D. What are the costs, capacity, and clinical implications of 'waiting for documented progression' in young West of Scotland patients prior to collagen cross linking? Eye. 2021;35:1808–10. <https://doi.org/10.1038/s41433-021-01444-x>.
- Koppen C. Identifying Eyes That Can Benefit From Cross-linking Is Mostly a Question of Clinical Judgment. Eye Contact Lens. 2021;47:485. <https://doi.org/10.1097/ICL.0000000000000826>.
- Larkin DFP, Chowdhury K, Burr JM, Raynor M, Edwards M, Tuft SJ, et al. KERALINK Trial Study Group. Effect of Corneal Cross-linking versus Standard Care on Keratoconus Progression in Young Patients: The KERALINK Randomized Controlled Trial. Ophthalmology. 2021. <https://doi.org/10.1016/j.ophtha.2021.04.019>.
- Moran S, Gomez L, Zuber K, Gatineau D. A case-control study of keratoconus risk factors. Cornea 2020;39:697–701. <https://doi.org/10.1097/ICO.0000000000002283>.
- Ferdi AC, Nguyen V, Gore DM, Allan BD, Rozema JJ, Watson SL. Keratoconus natural progression: a systematic review and meta-analysis of 11 529 eyes. Ophthalmology. 2019;126:935–45. <https://doi.org/10.1016/j.ophtha.2019.02.029>.

AUTHOR CONTRIBUTIONS

All authors contributed equally to the article.

COMPETING INTERESTS

The authors declare no competing interests.

ADDITIONAL INFORMATION

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