LETTER TO THE EDITOR

Evaluation of Goldmann applanation tonometry, rebound tonometry and dynamic contour tonometry in keratoconus

Evaluación de la tonometría por aplanación de Goldmann, la tonometría de rebote y la tonometría de contorno dinámico en el queratocono

Dear Editor,

We read with great interest the article by Özcura et al.,1 concerning the evaluation of Goldmann applanation tonometry (GAT), rebound tonometry (RT) and dynamic contour tonometry (DCT) in patients affected by keratoconus, suggesting that DCT may be the most appropriate tonometer to use in keratoconus for the measurements of intraocular pressure (IOP), because DCT does not appear to be dependent upon corneal thickness (CCT) and radius (CR).

This paper confirms previous finding in normal patients, as Lanza et al. found that DCT showed higher values of IOP, mainly related to CCT and volume, concluding that, if in the future DCT should be considered the gold standard, higher values of IOP could still be considered normal.2

In our opinion, in cases of keratoconus the difference between DCT and GAT could also be related to the corneal biomechanical changes, such as corneal hysteresis (CH) and corneal resistance factor (CRF). The same happens in corneas that underwent refractive surgery, where the changes in corneal thickness and radius make GAT and IOL power calculation unreliable.3-7

Moreover in these patients a significant decrease of CH and CRF immediately after myopic PRK that remains stable over the follow-up has been described, compared to normal eyes, in which these parameters have been shown to be related to the corneal shape and thickness. So these parameters could in addition influence the unreliability of GAT, making the DCT potentially better.8,9

A similar behavior therefore could be present in patients affected by keratoconus, where CH and CRF changes10 too could influence the differences between GAT and DCT, increasing or decreasing such differences.

Sources of public and private financial support

None.

Financial disclosure

None.

References


DOI of original article: http://dx.doi.org/10.1016/j.optom.2016.04.005

https://doi.org/10.1016/j.optom.2017.10.001

1888-4296/© 2017 Spanish General Council of Optometry. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).


Maddalena De Bernardo*, Nicola Rosa

Department of Medicine and Surgery, University of Salerno, Baronissi, Salerno, Italy

*Corresponding author at: Department of Medicine and Surgery, University of Salerno, Via Salvador Allende, 84081 Baronissi (SA), Italy. E-mail address: mdebernardo@unisa.it (M. De Bernardo).