

NCC 'FUTURE GENERATION 2024' POSTER Abstracts
SCIENTIFIC SESSION IN COOPERATION WITH THE BCLA

NCC 'Future generation 2024'

Organization Section: NCC/ BCLA

POSTER Abstracts

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Effects of hyaluronic acid eye drops on the repeatability of corneal topographies in irregular corneas

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Purpose: The purpose of the study was to investigate the effect of a hyaluronic acid (HA) eye drop (ED) on the repeatability of corneal topographies (CT) OF irregular corneas (IC).

Method: We selected 20 keratoconic eyes (14 moderate and 6 advanced) and 14 post keratoplasty eyes. All eyes had the capacity to see the fixation light of the topographer. For every eye 5 series of videokeratoscopic images (VI) were taken using a small-cone Placido disc topographer as baseline. The waiting period between each set of measurements was 10min and the best image of each set was digitalized. The Sim Ks, the SAI and SRI indices were considered for the analysis. After 1hr all measurements were repeated in the same conditions of temperature and humidity after 5min from the instillation of one drop of 0,1% concentration of cross-linked HA (SodyalX, Omisan Farmaceutici). To determine the repeatability of the CT the average deviation (AD) of SimKs, SAI and SRI founded in the 5 series of measurements was considered.

Results: In keratoconic eyes the ED use compared with baseline reduced significantly ($P < 0,05$) the AD of all parameters with respectively (mean \pm SD) 0,108 \pm 0,094 VS 0,194 \pm 0,138 for SAI 0,084 \pm 0,063 VS 0,148 \pm 0,121 for SRI, 0,128 \pm 0,087 VS 0,236 \pm 0,134 for steep

SimK and 0,122 \pm 0,103 VS 0,298 \pm 0,161 for flat SimK. Similar significantly results were found in post keratoplasty eyes with respectively 0,098 \pm 0,072 VS 0,184 \pm 0,117 for SAI, 0,107 \pm 0,082 VS 0,309 \pm 0,213 for SRI, 0,118 \pm 0,106 VS 0,383 \pm 0,228 for steep SimK and 0,105 \pm 0,094 VS 0,428 \pm 0,194 D for flat SimK.

Conclusions: In ICs the stability of tear film is reduced and the quality of VI acquired can be influenced by artefacts. This could justify the higher average deviations measured before the ED use. Using one drop of HA based ED before to acquire the VI increasing the stability of tear improves the reproducibility CT.

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