

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

NCC 'Future generation 2024'

Organization Section: NCC/ BCLA

POSTER Abstracts

Sunday, March 10 2024

Netherlands, Veldhoven,

NH De Koningshof, Baroniezaal

Study of diurnal variation of corneal biomechanics in a group of young adults

Langis Michaud, Juliette Blanchard

Purpose: The aim of this study is to verify whether corneal biomechanical parameters in young adults vary during the day,

Method: This is a prospective, non-randomized study. Participants are young adults (18-35 years), with no corneal anomalies or anterior segment pathologies. The study involved several visits on the same day. Tests performed include: best corrected visual acuity, slit lamp examination, tomography (Pentacam, Oculus) and analysis of biomechanics and compensated intraocular pressure (Corvis, Oculus). Goldman intraocular pressure is also taken. The tests are repeated 4 and 8 hours after the initial measurements.

Results: 32 participants were enrolled ($24,44 \pm 2,91$ y.o.; 72% Female). Both eyes were evaluated but data of one, randomly selected, was kept for analysis. Corneal Biomechanical Index (CBI) was $0,39 \pm 0,24$ at baseline, then $0,35 \pm 0,23$ at 4-8 h00 respectively. DA ratio did not evolve more, from $4,3 \pm 0,4$ at baseline to $4,4 \pm 0,4$, at 4 and 8 hours later. Integrated radius (IR) was kept similarly constant ($7,9 \pm 0,8$, then $8,1 \pm 0,9$, and $8,0 \pm 0,9$) ArTH was found similarly constant and at values associated with a stiff conrea: $513,9 \pm 104,4$, then $530,4 \pm 91,9$ (+4h), and $525,7 \pm 96,5$ (+8h.) SPA1 was not different as well ($98,1 \pm 13,2$, then $96,5 \pm 13,7$ (+4h) and $97,0 \pm 13,5$ (+8h)). Goldman tonometry was $16,1 \pm 2,7$ at baseline then

$14,6 \pm 2,8$ (+4h00) and $15,8 \pm 2,7$ (+8h00).

IOP compensated for biomechanical aspects was $15,7 \pm 1,7$ then $15,1 \pm 1,7$ (+4h) and $15,3 \pm 1,8$ (+8h0).

Conclusions: Even if IOP follows a diurnal variation curve, corneal biomechanical indices remain stable. It is suggesting that the corneal structure adapts to IOP variation to keep stability over time.

Research funding received: None.