NCC 2018
making a difference

First and Third Generation Silicone Hydrogel Contact Lens Physical Properties Impact on Patient Preference's

José A. Vega, OD, MSc, FAAO; Gary Orsborn, OD, MSc, FAAO, FBCLA; Steve Diamanti PhD

BCLA
British Contact Lens Association
PARTNERSHIP LEADERSHIP COMMUNITY

NCC 2018
making a difference

Purpose

- Since the launch of silicone hydrogel lenses in 1999, there has been a trend toward naturally wettable, lower modulus, and higher water content materials in the marketplace.
- Studies to date have not seen a direct correlation between lens modulus and comfort.
- This study aimed to understand if there are comfort-related patient preference differences that correspond with lenses of different moduli and water contents after 4 weeks of daily wear.

BCLA
British Contact Lens Association
PARTNERSHIP LEADERSHIP COMMUNITY

NCC 2018
making a difference

Study Design and Methods

- This was a prospective, double-masked, randomized, bilateral, crossover, dispensing study.
- Lenses compared were Avaira Vitality™ (fanfilcon A, FA, CooperVision), a 3rd generation silicone hydrogel lens, modulus of 0.6 MPa, water content (EWC) of 56%, and a naturally wettable surface) and Air Optix® Aqua (lotrafilcon B, LB, Alcon), modulus of 1.0 MPa, water content (EWC) of 33% and surface treatment to achieve wettability.
- Both lenses were worn by 47 adapted soft contact lens wearing subjects (37 female, 10 male) for 4-weeks each in a daily wear modality.
- Subjects used Opti-Free® PureMoist® MPS.

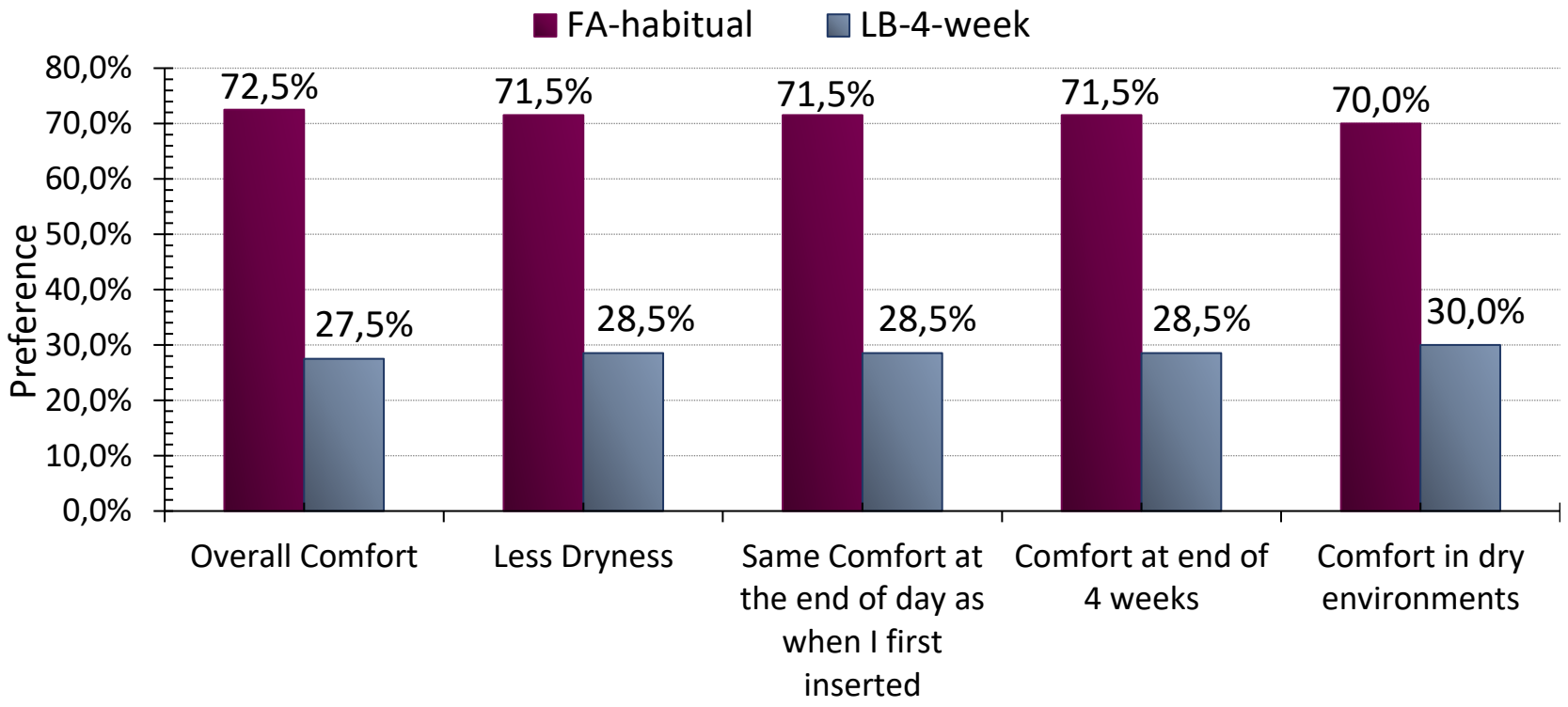
NCC 2018
making a difference

Results

- A total of 47 habitual soft contact lens wearers with a mean age of 27.1 years, (median 23 years, ranging from 18 to 63 years), were enrolled and dispensed study lenses.
- The means auto – refractive error, sphere and cylinder power for right and left eyes was as follows:
  - Sphere: Right : (-2.87 ± 1.62) and Left: (-2.84 ± 1.58)
  - Cylinder: Right: (-0.53 ± 0.24) and Left: (-0.50 ± 0.28)

Results / Preference

- Avaira Vitality (FA) was significantly preferred ($p<0.05$, all) over Air Optix Aqua (LB) for all comfort-related attributes including overall comfort, less dryness, same comfort at end of day as when first inserted, comfort at end of 4 weeks and comfort in dry environments.



NCC 2018
making a difference

Discussion (Conclusion)

- The findings suggest that lower bulk modulus and higher EWC lead to better comfort experiences and patient preferences after four weeks of wear.
- This finding is an important addition to the current state of knowledge of the impact of contact lens material properties on contact lens performance.
- Further work is needed to identify the complex interplay between key contact lens material properties and on-eye comfort to establish importance of each individual material property variable on clinical outcomes.

Study conducted at CORE, (University of Waterloo, Canada), with support from CooperVision Inc. All three authors are employees of CooperVision Inc.

BCLA
British Contact Lens Association
PARTNERSHIP LEADERSHIP COMMUNITY