Subjective Ratings, Preference and Surface Deposits after 4 weeks of Daily Wear of Silicone Hydrogel Contact Lenses

2014 Clinical Study

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Background: Contact lens-related discomfort remains the primary reason for discontinuation of lens wear and lens surface deposition can potentially lead to impaired optical quality and reduced wettability of the lens surface. The aim of this study was to compare subjective ratings, lens preference, and lens surface deposition over 4 weeks of daily wear of silicone hydrogel contact lenses.

Methods: This was a multi-site, bilateral, randomized, subject masked, 4 week cross-over study. Sixty-three adapted single-vision contact lens wearers were fitted with Biofinity® sphere (comfilcon A) and AIR OPTIX® AQUA sphere (lotrafilcon B) silicone hydrogel contact lenses. Follow-up visits were conducted at 2 and 4 weeks for each lens pair. Comfort and dryness were rated using a 0-10 scale. Lens front surface deposition was assessed using a 0 – 4 scale. Subject preference was recorded after each lens pair was worn for 1 month of daily wear. Opti-Free RepleniSH multipurpose disinfecting solution and lens cases were provided to all subjects for care and maintenance of their contact lenses during the study.

Results: Comfort ratings were significantly higher for the Biofinity lenses than Air Optix Aqua lenses on insertion at dispensing (9.2 ± 1.1 vs. 8.2 ± 2.0, p=0.0003) and at 4 weeks prior to lens removal (7.4 ± 2.0 vs. 6.6 ± 2.2, p=0.04). More subjects preferred Biofinity than Air Optix Aqua lenses at the study exit visit based on comfort (45% vs. 19%, p=0.01). There were no differences in dryness ratings during the day and overall between the lenses at 2 weeks (8.2 ± 1.8 vs. 8.0 ± 1.7, p=0.45), (8.0 ± 1.9 vs. 7.6 ± 1.7, p=0.28) or 4 weeks (8.3 ± 1.7 vs. 7.7 ± 2.0, p=0.06), (8.0 ± 1.8 vs. 7.4 ± 2.1, p=0.06). More subjects preferred Biofinity lenses than Air Optix Aqua at the exit visit based on dryness (43% vs. 21%, p=0.03) and vision (43% vs. 19%, p=0.02). There were significant differences in lens surface deposits at 2 weeks (0.46 vs. 1.05, p=0.0003) and 4 weeks (0.58 vs. 1.04, p=0.01), with Biofinity lenses showing less deposits than Air Optix Aqua lenses. A significantly higher proportion of subjects chose the Biofinity lens when asked which lens they preferred to receive a free 6-month supply at the study exit (69% vs. 31%, p=0.03).

Conclusions: This daily wear study demonstrated that subjects and observers were able to discriminate between two sphere silicone hydrogel lenses, Biofinity and Air Optix Aqua, in favor of Biofinity lenses.

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