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Organization Section: NCC/ BCLA

Paper Abstracts

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Clinical comparison of samfilcon A and kalifilcon A multifocal contact lenses: a randomized, double-masked, two-way crossover clinical study

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Purpose: The kalifilcon A multifocal (MF) contact lens (CL) incorporates the same multifocal optics as samfilcon A MFCL—a concentric center-near optical profile with more positive power at the center and progressing to more negative power in the periphery, the same radial transition zone designs between near, intermediate, and distance zones, and high and low add powers. Transferring optical designs between materials involves addressing differences in material properties, CL fit, processing, and clinical outcomes. This study assessed the clinical performance of kalifilcon A daily disposable MFCLs with samfilcon A MFCLs to evaluate the success of this design transfer.

Method: A randomized, bilateral, double-masked, two-way crossover study was conducted in subjects ≥ 40 years of age ($N=30$) who wore kalifilcon A MFCLs and samfilcon A MFCLs for 1 week each in randomized order on a daily disposable wear schedule. Binocular high-contrast, high-illumination logMAR visual acuity (VA) was measured at 6m (distance) and 40cm (near) following 1 week of wear of each CL. Non-inferiority was established using a margin of 0.06 logMAR (equivalent to 3 letters). Secondary assessments included visual quality and comfort (0–100 subjective rating scales), centration, movement, redness, staining, CL deposits, wettability, and incidence of adverse events/device deficiencies.

Results: Twenty-nine subjects completed the study. The mean difference between the CLs in binocular logMAR VA was -0.017 (distance) and -0.003 (near), both meeting non-inferiority criteria ($p<0.001$). Visual quality scores were similarly high (all means >80 , "very good"). Comfort ratings were higher for kalifilcon A at follow-up (mean 93.4 vs. 84.5, $p=0.002$), with no clinically meaningful differences in fit, movement, or ocular findings. All CLs exhibited excellent wettability and minimal deposition. No adverse events or device deficiencies were reported.

Conclusions: Kalifilcon A MFCLs demonstrated visual performance equivalent to samfilcon A MFCLs with greater overall comfort. These results confirm success of design transfer between materials.

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