

**Conclusion:** Current surgical treatments, which include lamellar keratoplasty and combined superficial keratectomy with conjunctival autograft, may lead to complications such as corneal perforation or recurrence of marginal keratitis in the graft. The use of rigid gas-permeable contact lenses is a viable option to improve vision and prolong the necessity of surgical intervention in Fuchs' superficial marginal keratitis.

## Poster 5

### Safety Evaluation of Systane Ultra® in Contact Lens Wearers

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**Objective:** The aim of this study was to evaluate the safety of Systane Ultra® containing polyethylene glycol 400 and propylene glycol demulcents with hydroxypropyl-guar as a gelling agent (Test Solution) in contact lens wearers. A comparison to a currently marketed contact lens rewetting drop was included as a control.

**Participants:** This was an investigator- and patient-masked, single-site, randomized, prospective study of 2 weeks duration involving 47 successful contact lens wearers with good ocular and general health.

**Methods:** At the screening visit, eligible subjects' baseline visual acuities and biomicroscopy findings were recorded. Subjects were randomly assigned to receive either the test solution or the control with masked labeling in prenumbered kits. Subjects were instructed to instill their assigned test article in both eyes 15 minutes before lens insertion, at least one drop during lens wear and another drop immediately after lens removal. After 14 days, biomicroscopy, including sum corneal staining and visual acuity results, were recorded.

**Results:** There were no adverse events documented for either the test or control solution. Biomicroscopic evaluations were within normal limits for both test and control solutions and visual acuity was not affected by treatment.

**Conclusions:** These results indicate that Systane Ultra is compatible for use with contact lenses.

*(Investigators received grant support funded by Alcon Laboratories.)*

## Poster 6

### Fungicidal Activity of Contact Lens Care Solutions Challenged With Clinical and Environmental Isolates of *Fusarium*

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**Background:** Because of recent outbreaks of *Fusarium* keratitis associated with a multipurpose contact lens care solution, the fungicidal efficacy of 4 multipurpose solutions and 2 hydrogen peroxide systems was evaluated against clinical

and environmental isolates of *Fusarium* based on the International Organization for Standardization (ISO) and the U.S. Food and Drug Administration (FDA) Stand-Alone Procedure for disinfecting products.

**Method:** Marketed solutions were challenged with clinical and environmental strains of *Fusarium* based on the ISO and FDA Stand-Alone Procedure for disinfecting products. Solutions were sampled for surviving microorganisms at the recommended disinfection time, 24 hours and 7 and 14 days. Serial dilutions and pour plates were prepared using validated recovery media. Appropriate incubation times and temperatures were observed. The numbers of viable microorganisms were enumerated and log reductions calculated. The following antimicrobial systems were evaluated: 1) Polyquad® (polyquaternium-1)/Aldox® (myristamidopropyl dimethylamine), 2) PHMB (polyhexamethylene biguanide), and 3) hydrogen peroxide (3% hydrogen peroxide w/neutralizing system).

**Results:** Solutions containing Polyquad/Aldox and 3% hydrogen peroxide showed similar log reduction activity at the disinfection time (2.0 logs or greater). Solutions containing PHMB showed lower log reduction activity than Polyquad/Aldox and hydrogen peroxide systems at the disinfection time (1.0 log or less). At extended storage times of 7 and 14 days, the Polyquad/Aldox and PHMB systems were effective against regrowth for all microorganisms. Only solutions containing 3% hydrogen peroxide showed regrowth of one or more microorganisms when stored for extended periods.

**Conclusion:** Contact lens care solutions containing the dual antimicrobial system Polyquad/Aldox were effective against clinical and environmental isolates of *Fusarium* at the disinfection time as well as extended storage times of 7 and 14 days. Hydrogen peroxide systems were effective at the disinfection time, but because of neutralization (at disinfection time) allowed regrowth of one or more microorganisms at 7 and/or 14 days extended storage. Both PHMB and Polyquad/Aldox solutions were effective at extended storage times and showed no regrowth of microorganisms. The results of this study indicate the importance of choosing a solution with a robust antimicrobial system that kills at the disinfection time as well as inhibits regrowth of clinical and environmental isolates of *Fusarium*.

*(Investigators are employees of Alcon Laboratories.)*

## Poster 7

### Fluorescence Measurements in Contact Lenses With a Novel Confocal Microscope

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**Background:** We measured the retention of sodium fluorescein in contact lenses, because topical fluorescein is