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Program#/Poster#: 272/B450

Abstract Title: **Postoperative Management of Dry Eye Conditions Following LASIK: A Subjective Pilot Study Comparing Viscous Eye Drops (Systane®) and Viscoadaptive Eye Drops (I-Drop®)**

Presentation Start/End Time: Sunday, Apr 30, 2006, 11:00 AM -12:45 PM

Location: Hall B/C

Reviewing Code: 166 dry eye disease - CO

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Keywords: 461 clinical (human) or epidemiologic studies: treatment/prevention assessment/controlled clinical trials, 498 drug toxicity/drug effects, 477 cornea: epithelium

Purpose: A pilot study evaluating two commercially available eye drops, Systane (Alcon) and I-Drop (Biocia) was conducted on 20 post-LASIK surgery patients in order to measure subjective outcome parameters. The rheological properties of four commercially available dry eye solutions were studied to determine dynamic elastic and viscous modulae of these solutions.

Methods: Twenty consecutive patients presenting for LASIK surgery were enrolled in the comparative pilot study. Rheological evaluations were performed on four commercially available dry eye solutions. A Bohlin VOR rheometer was used to study dynamic elastic and viscous modulea of all four solutions with special focus on the mean blinking frequency (8 Hz).

Results: Both eye drops appear to have a similar mechanism of action, i.e a mucoadhesive artificial tear substance which is adherent to the ocular surface for long lasting protection, coating and moisturizing as a either a viscous shield, in the case of Systane, or a viscoadaptive shield with I-Drop. Comfort and residence time appear to be clinically similar. However, immediate clarity of vision was superior with the viscoadaptive I-Drop. Results from this evaluation indicate that 80% of patients preferred I-Drop over Systane because they experienced less immediate blurring of vision following administration. Forty percent of patients indicated that I-Drop felt more comfortable and 60% felt that there was no difference while none preferred Systane as a tear substitute. Ninety percent of patients indicated that there was no difference between the number of applications required for both products and 70% of patients indicated that they preferred I-Drop over Systane. The rheological evaluations of four commercially available dry eye solutions show that I-Drop exhibits clearly different physical chemical characteristics when the dynamic viscous and elastic modulea were measured. It is postulated that these rheological differences translate to desirable clinical characteristics.

Conclusions: This subjective pilot study was designed to compare the physical characteristics of four commercially available dry eye solutions and therapeutic differences of two commercially available eye drops. Results suggest that further clinical evaluations are required to objectively substantiate the clinical advantages of I-Drop as a unique viscoadaptive eye drop. This study is presently ongoing at the Diamond Vision Laser Center with preliminary results compatible with the findings reported in this monograph.

Commercial Relationship: **I. Hofmann**, Biocia Inc., E; **H.L. Gould**, None.

Support: None

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