Cherie Nau1, OD, Ellen Shorter2, OD, Jennifer Fogt3, OD, MS, Jennifer Harthan4,OD, Amy Nau5, OD, and Muriel Schornack6, OD

1Mayo Clinic, Rochester, MN, USA;
2University of Chicago, Chicago , IL, USA;
3The Ohio State University, Columbus, OH, USA;
4Illinois College of Optometry, Chicago, IL, USA;
4Korb and Associates, Boston, MA, USA

Image-base technology vs diagnotic lenses for scleral lens fitting for keratoconus: Efficiency of the fitting process

Abstract: Background: Scleral contact lenses (SL) are a rigid lens that sit over the surface of the eye to provide improved visual optics for patients with ocular suface irregularities, such as keratoconus (KC). Tranditionally SL are fit with a diagnostic trial lens that is placed on the eye for evaluation. New technology aims to improve this process by taking an image of the ocular surface to aid lens design.
Purpose: This study compared image-based (IB) technology to diagnotic lenses (DL) for the fitting of SL for patinets with KC.
Methods: A questionniare was distiubuted to fitters of SL for KC. The time needed for initial fittting, number of lenses ordered and number of visits needed to complete SL fitting were collected. Mann Whitney test were used for comparison.
Results: 423 respondents responded to the survey. The meidian time for initial lens fitting was 30 [20 min, IQR] (n=107 IB, n=391 DL) minutes for both fitting modalities (P=0.5). Median number of lenses ordered was 2 [2] lenses for each, (P=0.322, n=104 IB, n=389 DL). The median number of visits was 4 [2] (n=104) for IB and 4 [3] (n=390) for DL, (p=0.2).
Conclusion: In this study, time for fitting, the number of lens orders and number of visits for SL fitting between image-based and diagnotic lens fitting are similar. However, with improvements to technology there is potential for image-based design to streamline the fitting process and potentially improve visual outcomes for patients with corneal irregularities.

Keywords: corneal optics, ocular surface topography, keratoconus, scleral contact lens

Biography: Dr. Nau is a fellow of the American Board of Optometry, the American Academy of Optometry, and the Scleral Lens Education Society. She is a member of the Association for Research in Vision and Ophthalmology and the Scleral Lenses in Current Ophthalmic Practice Evaluation (SCOPE) study group. Dr. Nau has been involved in eye research for over 25 years. Dr. Nau's current research focuses on the use of scleral contact lenses for treatment of corneal irregularities and ocular surface diseases. Dr. Nau has a special interest in dry eye diseases with special emphasis on ocular graft vs. host disease.

ISBN: 978-1-0685851-2-8