

Clinical Findings, Visual Performance and Ocular Symptoms Over 1 Year in a Sample of Scleral Lens Wearers

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The emergence of modern scleral lenses has changed the contact lens practice and management of patients with corneal irregularities of different etiologies. Recently, long-term prospective studies have pointed out the safety, optical quality, comfort enhancement and fitting characteristics over 1 year of scleral lens wear in a sample of 69 subjects. (1, 2, 3) Subjects were divided in 2 groups according to their corneal condition: irregular corneas or healthy corneas. Scleral lens fitting allowed to significantly improve objective visual quality outcomes (visual acuity – VA -, night vision disturbances and ocular high order aberrations) and subjective (Quality of Vision questionnaire) in both groups, without any statistically nor clinically significant differences over the 12-month of follow-up, reflecting the optical stability provided by these lenses. It was also observed that high contrast VA with scleral lens was very similar in the 2 groups of patients, however other measures (low contrast VA, night disturbances, aberrations and subjective perceptions) showed a lower visual performance in the group of irregular corneas, demonstrating the importance of these complementary measures to correctly characterize the visual improvement in patients with irregular corneas. This detailed visual assessment will also be important for assessing the visual results of new lens designs (customized optical surfaces to correct residual ocular aberrations, for example). Focusing on the scleral lens fitting characteristics, it was possible to conclude that, besides the well-documented short-term settling of scleral lens (reduction in tear film reservoir thickness), this work also suggests that a 20% additional settling could be observed over the first 12 months of lens wear, so practitioners should be aware of that when fitting scleral lenses. Corneal swelling was below 3% with respect to baseline, and post graft corneas tended to have higher levels of corneal swelling. Although no severe adverse events were recorded, scleral lens wear was related to higher levels of conjunctival hyperemia and staining. Besides that, subjects of both groups reported enhanced comfort with scleral lenses comparing to their habitual correction prior enrolling the study. Although in the literature midday fogging is reported to occur in 20-30% of scleral lens wearers, there were no reports of incapacitating fogging on this study, fact that could be related to the large number of toric haptic zone fittings (more than 80% of the fittings) and reduced tear reservoir thickness. More prospective studies specifically designed to address long term (> 12 months) performance of scleral lens wear will certainly aid valuable information regarding the effectiveness and safety of these lenses.

References:

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