INTRODUCTION

Several myopia treatment options have been investigated to determine the effect of single vision spectacle lenses, progressive addition spectacles lenses, rigid gas permeable lenses and soft contact lenses on myopia progression(1-5).

No significant difference in myopia progression between single vision spectacle and single vision hydrogel contact lenses was reported(4-5).

Hence, we hypothesised that a single vision hydrogel contact lens with a low Dk/t hydrogel contact lens(6).

PURPOSE

To compare myopia progression in Chinese children after 12 months wear of single vision spectacles (SPL) and single vision silicone hydrogel contact lenses (SHCL).

MATERIALS AND METHODS

Rates of progression of myopia over 12 months in myopic Chinese children aged 7 to 14 years both baseline myopia between -0.75 to -3.50D of sphere and cylinder ≤1.00D) were measured at Zhongshan Ophthalmic Centre, Guangzhou, China for a group wearing single vision silicone hydrogel contact lenses (SHCL Group, n=53, Lotrafilcon B, CIBA Vision, USA) and a group wearing normal spherical–cylindrical spectacles (SPL Group, n=41) from two myopia control studies.

Cycloplegia was achieved with instillation of topical proparacaine hydrochloride 0.5% and Tropicamide 1%, 2 drops 5 minutes apart, with measurements 30 minutes after the second drop.

Cycloplegic central refraction was measured with an open field autorefractor (Shin Nippon NVision K-5001, Japan) at baseline, 6 and 12 months.

Axial length (AL) and corneal curvature were measured with an IOLMaster (Meditec Carl Zeiss, Germany) at baseline, 6 and 12 months.

Peripheral refraction along the horizontal meridian (20°, 30° and 40° nasal and temporal fields) was measured with a fundus autorefractor (Shin Nippon NVision K-5001, Japan) with and without correction at baseline.

The relative peripheral refractive error (RPRE) was defined as the amount of peripheral refractive power with respect to central refraction at each field angle.

The investigation was conducted in accordance with the tenets of the Declaration of Helsinki. Approval by local Institutional Review Board (IRB) was obtained for all procedures involving human subjects.

Those with the diagnosis of high myopia were excluded.

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**REFERENCES**


**CONCLUSION**

Myopia progression (ax SE) was lower for the SHCL Group than for the SPL Group after 6 and 12 months and was statistically significant less at 6 months, but not at 12 months.

The slower myopia progression rates observed with the SHCL cannot be explained by corneal curvature changes.

The slower myopia progression observed for SPL may have been due to higher rates of induced relative peripheral hyperopia with SPL, suggesting that variations in lens design may impact peripheral refractive errors and possibly progression of myopia.

**PERIPHERAL REFRACTION WITH AND WITHOUT CORRECTION**

Analysis of peripheral refraction results showed that SPL produced less amounts of peripheral hyperopic defocus than SHCL for 45° temporal, 20° and 30° nasal field (p<0.05, p<0.01 and p<0.001, respectively) and averaged across all field angles (SPL Group=-1.97±0.43D, SHCL Group=-1.93±0.49D, p<0.002).

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