IMC Abstract

Myopia progression after cessation of Diffusion Optics Technology (DOT) spectacle lenses

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Purpose

To investigate myopic progression in children following the cessation of Diffusion Optics Technology™ (DOT) spectacle lenses after wearing for at least 4 years.

Method

Children who completed the CYPRESS 4-year study (NCT04947735) were eligible to enroll in this 1-year cessation study (NCT05893979), in which the control group (n=22) continued wearing standard single vision spectacle lenses and the DOT group (n=32) were crossed over to standard single vision spectacle lenses. To assess any possible rebound effect, measurement of cycloplegic refractive error (cSER) and axial length (AL) progression was planned at 6-monthly intervals.

Results

Fifty-four children (57% female) with a mean age of 13.54 (10.8 to 15.5) years enrolled in the study. The baseline mean (±SD) cSER and AL for Test was -3.27 (2.01) D and 24.75 (1.03) mm and for Control -3.77 (1.28) D and 24.99 (0.73) mm. The current available interim sample included 41 children. After 6-months of wear, the mean ±SD myopia progression based on cSER difference for the original DOT group (n=24) was -0.12 ±0.23 D and for Control (n=17) was -0.16 ±0.19 D. For axial length, the difference was 0.11±0.06 mm for the original DOT group and 0.08 ±0.08 mm for Control. No significant differences in myopia progression (-0.04 D, 95% CI -0.18 to 0.09, p=0.56) and axial elongation (-0.03 mm, 95% CI -0.07 to 0.01, p=0.18) were found between the original DOT and Control groups.

Conclusion

The interim results from this ongoing study suggest that neither myopia progression nor axial growth was faster for the subjects who discontinued DOT spectacle lens wear compared to those who continued to wear single-vision spectacles. These findings indicate DOT spectacle lens treatment benefit is retained after cessation of treatment.

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