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High myopia – partial reduction orthokeratology (HM-PRO) study: recruitment and 1-year result

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Purpose: To assess the clinical performance of partial reduction orthokeratology (ortho-k) and myopic progression in high myopic children after 1 year of lens wear.

Method: Children (8 to 11 years old) with refractive errors -5.75 D or above were recruited and randomly assigned into ortho-k and control groups. Ortho-k children were partially corrected with a custom made 4-zone ortho-k lenses (DreamLite, Procornea, The Netherlands) of target 4.00 D. Residual refractive errors were corrected with a pair of glasses to ensure that the subjects were fully corrected for distance in the daytime. Control subjects were fully corrected with single vision spectacles. Axial length was monitored with the IOLMaster during the treatment period.

Results: Twenty-six and 18 children were assigned into the ortho-k and control groups respectively. Eighteen ortho-k subjects were successfully fitted with the first pair of lenses. Remaining 8 subjects did not achieve good fit despite lens modification and were excluded from the study. Fifteen ortho-k and 13 control subjects have completed the 12-month visit. Baseline refractive errors and axial length were not significantly different in the two groups (p>0.05). Changes in axial length were 0.07 mm (SD=0.13mm) in the ortho-k group and 0.29 mm (SD=0.20mm) in the control group and the difference was significant (unpaired t-test, p=0.001). No significant complication was found during the reporting period for either group of subjects.

Conclusions: Partial reduction ortho-k has the potential to slow myopic progression in high myopic children.

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Biography sketch: Miss Jessie Charm is currently a Project Associate of the School of Optometry, The Hong Kong Polytechnic University. She obtained her BSc (Hon) in Optometry from the Department of Optometry of The Hong Kong Polytechnic University in 2004. In 2006, she joined the School of Optometry as a Project Assistant and participated in CLEAR (Contact Lens Education And Research) project. She obtained a Certificate of Attainment for Orthokeratology Practice Course in 2006 under the School of Optometry. She is currently a part time MPhil student (funded by a Collaborative Research Agreement between PolyU and Procornea) under Dr Pauline Cho.

Accepted by:

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Minor changes needed? YES □ NO □