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Slowing the Progression of Myopia in Children with the Low Lever Red Light: A 6 Month RCT Evidence

Purpose: The purpose of this study was to quantify the effectiveness of Low-Lever Laser Light (LLLT) in slowing the progression of children myopia.

Methods: Myopic children (spherical equivalent refraction, -0.75 to -6.00 D; astigmatism, <2.50 D), aged 8 to 12 years with no prior contact lens experience were enrolled in a 1-year (with follow-ups at 3- month and 6- month), single-masked, randomized clinical trial. Subjects in each group were matched for age, gender, and refractive error and were randomized to either a LLLT (test) group or single vision spectacles (control) group. Primary outcome measures were the change in axial length. Only the right eye values (axial length, chorioidal thickness, anterior chamber depth, and cornea curvature) changed from baseline to those of follow-ups was compared between the two groups. This study was to assess the changing values from 3- and 6- month follow-ups from the baseline, especially the axial length.

Results: Of the subjects enrolled, there were no significant difference between ages, genders, and baseline parameters (axial length, refractive error, anterior chamber depth, cornea power, or chorioidal thickness). 68.0% (34/50) completed the 6- month follow-ups (22 test, 12 control at 6 month). Mean change in axial length was 0.21mm and 0.27mm less in the test group than in the control group (-0.09 ± 0.10 vs. 0.20 ± 0.10 mm; -0.07 ± 0.12 vs. 0.20 ± 0.10 mm, $P < .0001$ and $P < .0001$) at 3- and 6-month, respectively. There was no significant difference of anterior chamber depth, chorioidal thickness or cornea power from baseline to follow-ups between test and control groups ($P > 0.05$, respectively). Over the course of the study, there were no cases of serious ocular adverse events reported.

Conclusions: LLLT twice daily has significant efficacy in control myopic axial length at 6- and 3- month follow-ups.

Biography

Jenny Qiu, MD in ophthalmology and MS in optometry, who spent 8 years education in Wenzhou medical university with another 3 years resident and fellowship in Joint Shantou International eye center before she visited Hongkong Eye Hospital as a visitor scholar. Her expertise focused in evaluation and improving the ocular health and wellbeing from eye diseases. She had also the experience in ophthalmologic company besides eye hospitals both the public and the private. She has built both structure and function disorders aspects in myopia control, amblyopia treatment, glaucoma follow-ups, as well as eye fatigue in some lifestyle model with years of clinic experience in research, evaluation, teaching and administration both in hospital and education institutions. And recently, she is focusing a new approach to control axial length with low lever laser diode red light, which had demonstrated a strong effect on slight shortened myopic axial length for the first 3-6month follow-ups.

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