

Axial shortening in myopic children after Repeated Low-Level Red-Light Therapy

Post Hoc Analysis of a Randomized Trial

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Purpose:

To systemically report unexpected axial length (AL) shortening observed in a randomized clinical trial (RCT) after Repeated Low-Level Red-Light (RLRL) therapy.

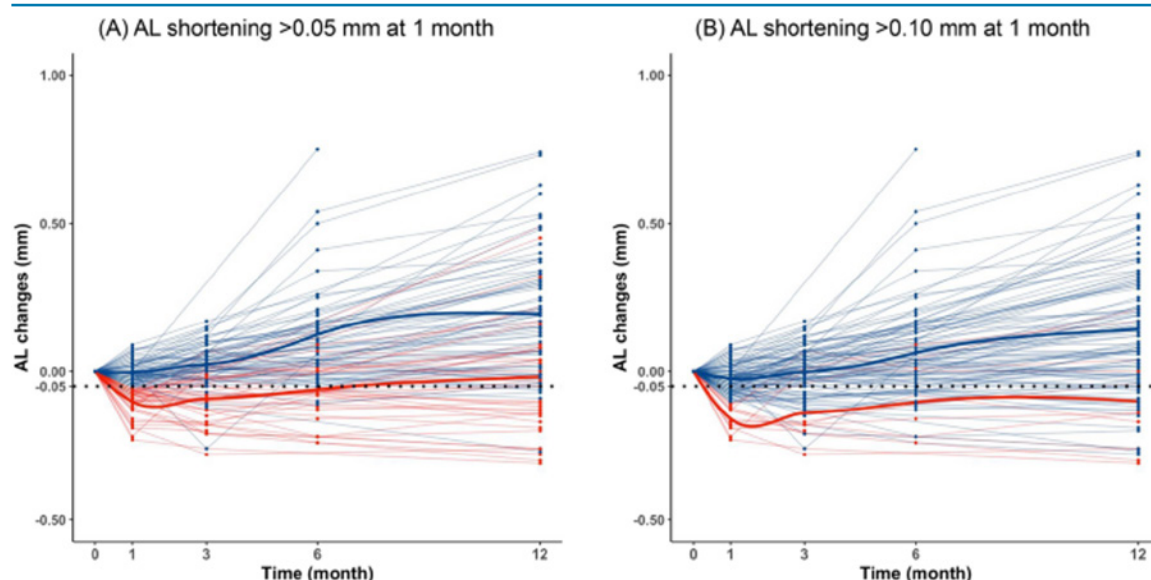
Method:

This is a post hoc analysis of a multi-center, single-masked RCT. Two hundred sixty four myopic children aged 8–13 years allocated to RLRL treatment (intervention group) or a single vision spectacle (SVS, control group) were included. AL was measured using an IOL-master 500 at baseline, 1-, 3-, 6-, and 12-month follow-up visits.

Clinical trial results:

1. At 12-month follow up, frequency of AL shortening >0.05 mm was 26/119 (21.85%) and 2/145 (1.38%) for the RLRL group versus the control group, respectively.
2. The frequency was 18/119 (15.13%) versus 0/145 (0%) for AL shortening >0.10 mm, and 7/119 (5.88%) versus 0/145 (0%), for AL shortening >0.20 mm, respectively.
3. Mean AL shortening after 12 months (SD) was -0.156 (0.086) mm in the RLRL group and -0.06 mm in the control group.
4. Age was significantly associated with AL shortening in the multivariable analysis.
5. For the RLRL group that exhibited AL shortening ($n = 56$), choroidal thickness (ChT) thickening (0.056 mm) could only explain 28.3% of AL shortening (-0.20 mm).

Clinical trial outcome:



Trajectory of AL at each follow up visit for each child in RLRL group stratified by early responses to treatment. **A** AL shortening >0.05 mm from baseline to 1 month. **B** AL shortening >0.10 mm from baseline to 1 month. Each single line represents the trajectory of AL change in a year for each child in the RLRL group. The red line and blue line represent the children who had AL shortening or not at 1 month. To account for the measurement error (0.05 mm), AL shortening was defined as AL reduced by at least 0.05 mm, and a reference line of $y = -0.05$ mm is presented. RLRL Repeated Low-Level Red-Light, SVS single vision spectacle, AL axial length. Red represents the children that achieved AL shortening at 1 month. Blue represents the children that did not have AL shortening at 1 month.

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To find out more about the Repeated Low-Level Red-Light Therapy available via the Eyerising Myproclear, get in touch with your local Eyerising International team today.