

Reply to Letter to Editor: Overminus Lens Therapy in the Management of Children with Intermittent Exotropia

Dear Editor,

We acknowledge and appreciate Singh *et al.* for their interest in our recently published article entitled “Overminus lens therapy in the management of children with intermittent exotropia”¹ and would like to take this opportunity to address the queries and doubts raised by them.

Regarding the cutoff point for the age of younger children, we had mentioned that the amount of the overcorrection was determined by the maximum tolerated lens power. The maximum tolerated lens was chosen based on the children’s capability to read 20/25 at distance and near fixation. Other children without this capability were considered younger children. Therefore, the definition of a cutoff point for the age of this subgroup of the children was not logical and could decrease the accuracy of the study. In addition, Singh *et al.* discussed possible nonhomogeneities between this subgroup of patients with elder children. As we list in the limitations of the study, “the accurate determination of the deviation is not generally possible in very young children, so the decrease of deviation in the course of the present study may be due to measurement error”. In addition, Bayramlar *et al.*² described a similar methodology in their study.

Singh *et al.* suggested further statistical analyses with repeated-measures analysis of variances (ANOVA) (parametric) and Friedman (nonparametric) tests to assess the efficacy of 1-year minus therapy on the level of intermittent exotropia [X(T)] control. These tests can investigate the changes in mean scores over three or more time points. The results of these tests showed the level of X(T) control was improved significantly during the 1-year follow-up after the treatment initiation (with three times of evaluation: Before, 6 months, and 1 year after the treatment). The *P* value for both repeated-measures ANOVA and Friedman tests was <0.001 , similar to our previously reported results in the study.

Regarding not performing the monocular occlusion during deviation measurement, we did not classify X(T) based on near/distance disparity as defined in Burian’s classification system.³ This system is mainly established for the recommendation of different surgical procedures according to the type of X(T).⁴ As mentioned in the methodology of the study, we measured “angle of deviation at distance and near measured using the prism and alternate cover test and exodeviation control at distance and near” for all participants. In addition, we used Caltrider and Jampolsky’s qualitative criteria to assess the patients. In this criterion, ocular deviations are measured with a prism and alternate cover test while the child is requested to fix on an accommodative target at both far

and near distances.⁵ Because we did not use the quantitative Newcastle control system due to the retrospective nature of our study and lack of enough data, the details of deviation controls at near and far were not mentioned in the results.

Singh *et al.* claimed, “only those [of patients with X(T)] with high accommodative convergence/accommodation (AC/A) ratio are likely to respond to overminus therapy”. In addition, they criticized not assessing the AC/A ratio in our study. However, previous studies revealed even children with low and normal AC/A ratios might respond well to overcorrecting minus lens therapy.^{5,6} Therefore, we consider that a low AC/A ratio cannot guarantee the ineffectiveness of overminus lens therapy.

Regarding the sensory status and amblyopia therapy during the treatment period, the patients underwent serial follow-up visits for evaluating any conditions which may lead to sensory impairment, and participants were screened for progression to amblyopia during the treatment period. As we described in the methods section, “overminus lens therapy was stopped if there was deterioration or no improvement in exodeviation control at two consecutive visits for 6 months. In patients who progressed to esotropia, the treatment was stopped immediately”. As we mentioned in the results section, “three patients progressed to esotropia, which could induce the risk of amblyopia and decreased stereoacuity. They were scheduled for strabismus surgery”. In addition, patch therapy was done just for two patients (4 h/day) during the study period.

Regarding not assessing stereoacuity at distance as an important marker for deterioration in X(T), Hatt *et al.*⁷ evaluated the predictors of surgery in children with intermittent exotropia; after multivariate analysis, just distance control score and parent function subscale intermittent exotropia questionnaire score were predictive of surgery and near preschool Randot stereoacuity, and distance Randot stereoacuity were not predictive factors for surgery in children with X(T).

Finally, as we discussed the limitations of this work, it was a retrospective study without a control group and long-term follow-up to measure the persistence of the observed effects.

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Conflicts of interest

There are no conflicts of interest.

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