

塑型片控制近視12年長期研究

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此篇我們發表於2017年 *BMC Ophthalmology*，是目前對塑型片控制近視的研究中，追蹤時間最長的論文，目前已經被19篇論文及書籍所引用。我們回顧了66位學童配戴塑型片的近視控制效果，最小7歲，最大16歲，最長的追蹤時間長達13年，並與36位年齡與度數相仿的戴眼鏡學童相比較。配戴者中平均的近視度數大約-3.7 D (370度)，最高的近視度數高達-8.0 D (800度)；散光的平均度數-0.55 D (55度)，最高的散光度數-3.0 D (300度)。經過多年的追蹤觀察後，發現配戴塑型片的學童在近視度數上的增加明顯地比戴眼鏡的學童少($P < 0.001$)，而散光度數較高者似乎近視度數增加會比較明顯；而這些配戴塑型片學童在規律的返診檢查中，並沒有明顯的併發症。這顯示學童配戴塑型片比單純配戴眼鏡更能夠減緩近視度數的增加。

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RESEARCH ARTICLE

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Effect of Orthokeratology on myopia progression: twelve-year results of a retrospective cohort study

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Abstract

Background: Several studies reported the efficacy of orthokeratology for myopia control. Somehow, there is limited publication with follow-up longer than 3 years. This study aims to research whether overnight orthokeratology influences the progression rate of the manifest refractive error of myopic children in a longer follow-up period (up to 12 years). And if changes in progression rate are found, to investigate the relationship between refractive changes and different baseline factors, including refraction error, wearing age and lens replacement frequency. In addition, this study collects long-term safety profile of overnight orthokeratology.

Methods: This is a retrospective study of sixty-six school-age children who received overnight orthokeratology correction between January 1998 and December 2013. Thirty-six subjects whose baseline age and refractive error matched with those in the orthokeratology group were selected to form control group. These subjects were followed up at least for 12 months. Manifest refractions, cycloplegic refractions, uncorrected and best-corrected visual acuities, power vector of astigmatism, corneal curvature, and lens replacement frequency were obtained for analysis.

Results: Data of 203 eyes were derived from 66 orthokeratology subjects (31 males and 35 females) and 36 control subjects (22 males and 14 females) enrolled in this study. Their wearing ages ranged from 7 years to 16 years (mean \pm SE, 11.72 \pm 0.18 years). The follow-up time ranged from 1 year to 13 years (mean \pm SE, 6.32 \pm 0.15 years). At baseline, their myopia ranged from -0.5 D to -8.0 D (mean \pm SE, -3.70 \pm 0.12 D), and astigmatism ranged from 0 D to -3.0 D (mean \pm SE, -0.55 \pm 0.05 D). Comparing with control group, orthokeratology group had a significantly ($p < 0.001$) lower trend of refractive error change during the follow-up periods. According to the analysis results of GEE model, greater power of astigmatism was found to be associated with increased change of refractive error during follow-up years.

Conclusions: Overnight orthokeratology was effective in slowing myopia progression over a twelve-year follow-up period and demonstrated a clinically acceptable safety profile. Initial higher astigmatism power was found to be associated with increased change of refractive error during follow-up years.

Keywords: Myopia, Myopia control, Orthokeratology, Contact lenses, Optical intervention

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