

INPLASY PROTOCOL

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None declared.

The effect of 0.01% atropine on ocular axial elongation for myopia children: A protocol for systematic review and meta analysis

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Review question / Objective: Therefore, the present meta-analysis aimed at determining the effect of 0.01% atropine on ocular axial elongation for myopia children.

Condition being studied: However, due to individual differences, research groups, drug concentrations, and research design differences, the safety and effectiveness of the combined treatment still need to be verified.

Eligibility criteria: 1. Type of study. This study included high quality randomized controlled trials, cohort studies and case-control studies. 2. Type of patients. The patients should be children aged younger than 18 years, who undergone myopia. We will not apply any restrictions of race, age, education background, and economic status. 3. Intervention and comparison. This study compared OKA with OK for myopia control. 4. Type of outcomes. The primary outcome was ocular axial elongation.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 24 March 2022 and was last updated on 24 March 2022 (registration number INPLASY202230139).

INTRODUCTION

Review question / Objective: Therefore, the present meta-analysis aimed at determining the effect of 0.01% atropine on ocular axial elongation for myopia children.

Rationale: Orthokeratology has a significant effect on the control of myopia

progression, and has been accepted by doctors and patients. There are a small number of studies have shown that the combination of orthokeratology and atropine can enhance the effect of myopia control. However, due to individual differences, research groups, drug concentrations, and research design differences, the safety and effectiveness of

the combined treatment still need to be verified.

Condition being studied: However, due to individual differences, research groups, drug concentrations, and research design differences, the safety and effectiveness of the combined treatment still need to be verified.

METHODS

Participant or population: The patients should be children aged younger than 18 years, who undergone myopia.

Intervention: OKA.

Comparator: OK.

Study designs to be included: High quality randomized controlled trials, cohort studies and case-control studies.

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Information sources: We will search PubMed, Cochrane Library, and CBM databases from inception to July 1st, 2021. The following keywords and MeSH terms were used: ["orthokeratology"] and ["atropine"] and ["myopia"]. We will also perform a manual search to find other potential articles.

Main outcome(s): We will calculate the weighted mean differences(WMD) with their 95%confidence intervals(CIs) to analyze the change of axial length between OKA and OK.

Quality assessment / Risk of bias analysis: Each of these biases were classified as

high risk (score 0), low risk (score 2) and unclear risk of bias (score 1). The total risk of bias will be calculated by a summation of all categories.

Strategy of data synthesis: Review Manager 5.3 (The Nordic Cochrane Centre, Copenhagen, Denmark) and STATA version 14.0 (Stata Corp, College Station, TX, USA) softwares will be used for the meta-analysis. We will calculate the weighted mean differences(WMD) with their 95%confidence intervals(CIs) to analyze the change of axial length between OKA and OK. The Cochran's Q-statistic and I² test will be used to evaluate potential heterogeneity between studies. If significant heterogeneity was detected(Q test P50%), a random effects model or fixed effects model will be used. To evaluate the influence of single studies on the overall estimate, a sensitivity analysis will be performed.

Subgroup analysis: We will also perform sub group and meta-regression analyses to investigate potential sources of heterogeneity.

Sensitivity analysis: To evaluate the influence of single studies on the overall estimate, a sensitivity analysis will be performed.

Country(ies) involved: China.

Keywords: Atropine; Meta-analysis; Myopia; Orthokeratology.

Contributions of each author:

Author 1 - Yue Gao.

Author 2 - Yan Yu.