INPLASY PROTOCOL

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None declared.

Pediatric tuina in treating recurrent respiratory tract infection in children: a systematic review and meta-analysis

Wang, XY[1].

Review question / Objective: **Is pediatric tuina an effective treatment for recurrent respiratory tract infection in children?**
Condition being studied: **Recurrent respiratory tract infection (RRTI) is a common disease in children, which refers to the recurrence of upper and lower respiratory tract infections within a year, exceeding the prescribed number of times. It is more common in infants under 3 years old. The disease is easy to relapse and lasts for a long time, affecting the normal growth and development of children and physical and mental health, easily causing other diseases, leading to a variety of chronic wasting diseases, and damaging the function of organs and the immune system. Immunotherapy and nutritional therapy are commonly used in Western medicine. At present, the treatment of RRTI in children with traditional Chinese medicine has achieved a certain effect, and the treatment mainly includes internal treatment and external treatment. Tuina therapy is one of the common therapies for the treatment of RRTI in children with traditional Chinese medicine. Because of its advantages, there are many literature reports on tuina treatment of this disease, with a good total effective rate, but whether its therapeutic effect is higher than other therapies has not been determined as a whole. This study used the method of systematic review to collect the published clinical research literature on the treatment of RRTI in children at home and abroad for systematic review, so as to provide a reference for clinical research.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 21 April 2023 and was last updated on 21 April 2023 (registration number INPLASY202340075).

INTRODUCTION

Review question / Objective: **Is pediatric tuina an effective treatment for recurrent respiratory tract infection in children?**

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It is more common in infants under 3 years old. The disease is easy to relapse and lasts for a long time, affecting the normal growth and development of children and physical and mental health, easily causing other diseases, leading to a variety of chronic wasting diseases, and damaging the function of organs and the immune system. Immunotherapy and nutritional therapy are commonly used in Western medicine. At present, the treatment of RRTI in children with traditional Chinese medicine has achieved a certain effect, and the treatment mainly includes internal treatment and external treatment. Tuina therapy is one of the common therapies for the treatment of RRTI in children with traditional Chinese medicine. Because of its advantages, there are many literature reports on tuina treatment of this disease, with a good total effective rate, but whether its therapeutic effect is higher than other therapies has not been determined as a whole. This study used the method of systematic review to collect the published clinical research literature on the treatment of RRTI in children at home and abroad for systematic review, so as to provide a reference for clinical research.

METHODS

Search strategy: We searched Cochrane Library, PubMed, Web of Science, EMBASE, Wanfang Data, CNKI, VIP and CBM databases for determining the randomized controlled trials (RCTs) that applied pediatric tuina in treating RRTIs in children, from inception to May 2023.

Participant or population: Pediatric patients diagnosed with RRTIs.

Intervention: Intervention group used pediatric tuina alone or plus other non-tuina therapies.

Comparator: Control group used other non-tuina therapies, which were the same in the twogroups.

Study designs to be included: Randomised controlled trials(RCTs) published will be eligible for inclusion.

Eligibility criteria: 1. Type of studies. All randomized controlled trials (RCTs) that evaluate the effectiveness and safety of pediatric tuina in the treatment of RRTI children will be included. 2. Types of participants. Pediatric patients diagnosed with RRTIs. 3. Types of intervention. Intervention group used pediatric tuina alone or plus other non-tuina therapies. Control group used other non-tuina therapies, which were the same in the two groups. 4. Types of outcome measures. Incidence of RRTIs was set as our primary outcome, whereas serum immunoglobulins (IgA, IgG, IgM), T-lymphocytes (CD3+, CD4+, CD8+, CD4+/CD8+ ratio), duration of infection, total effective rate, as well as adverse events were set as secondary outcomes.

Information sources: We searched Cochrane Library, PubMed, Web of Science, EMBASE, Wanfang Data, CNKI, VIP and CBM databases for determining the randomized controlled trials (RCTs) that applied pediatric tuina in treating RRTIs in children, from inception to May 2023.

Main outcome(s): The incidence of RRTIs was set as our primary outcome.

Additional outcome(s): Serum immunoglobulins (IgA, IgG, IgM), T-lymphocytes (CD3+, CD4+, CD8+, CD4+/CD8+ ratio), duration of infection, total effective rate, as well as adverse events were set as secondary outcomes.

Data management: The literature was screened independently by two evaluators based on pre-defined inclusion and exclusion criteria and then cross-over, with discussion to resolve any disagreements or consultation with a third evaluator to make a decision if they arose. The following information and data were extracted from each included clinical trial: authors, time of publication, randomization method, blinding, number of cases of observation, diagnostic criteria, interventions and controls, duration of treatment, efficacy indicators, and follow-up.

Quality assessment / Risk of bias analysis: Cochrane risk bias evaluation tool V. 5.1.0 was adopted for evaluating literature quality. The items included allocation concealment, random sequence generation, participant/personnel blinding, outcome assessment blinding, incomplete outcome data, selective reporting as well as other bias. In addition, two reviewers were responsible for the independent evaluation of included study quality and settling all disputes after discussion with a third reviewer.

Strategy of data synthesis: RevMan 5.40 software was employed for statistical analysis. Continuous variables were examined by mean difference (MD) along with associated 95% confidence intervals (CIs). Whereas dichotomous variables were assessed by relative risk (RR) together with 95% CIs. In addition, I2 statistics and (P) value from the Q test were applied for calculating heterogeneities in included studies. The fixed-effects model should be employed upon I2 ≤ 50% and P > 0.1, or else, the random-effects model should be applied. Also, subgroup analysis was conducted in line with control group type and differences between treatment and follow-up periods. Furthermore, the GRADEpro software was applied in determining the evidence levels. We drew Funnel plot for examining publication bias. P < 0.05 represented statistical significance.

Subgroup analysis: If the included studies are highly heterogeneous, we will perform a subgroup analysis based on age, sample size, methodological quality, etc.

Sensitivity analysis: If heterogeneity is significant, we will conduct a sensitivity analysis to assess the robustness and quality of the findings by excluding each included study individually and varying the study's impact scale.

Language restriction: Chinese and English.

Country(ies) involved: China.

Keywords: Paediatric tuina, recurrent respiratory tract infections in children, Traditional Chinese Medicine, randomized controlled trials, meta-analysis.

Contributions of each author:
Author 1 - Wang Xiaoyu - Author 1 drafted the manuscript.
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