

INPLASY PROTOCOL

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Review Stage at time of this submission: The review has not yet started.

Conflicts of interest:
None declared.

A Systematic Review and Meta-analysis of Acupuncture for Tourette Syndrome in Children

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Review question / Objective: **P:** Pediatric patients (younger than 18 years) with a definite diagnosis of Tourette 's syndrome. **I:** Acupuncture combined with drug therapy. **C:** Drug therapy alone. **O:** Tourette SyndromeGlobal Scale (TSGS), Yale Global Tic Severity Scale (YGTSS), Hopkins Motor and Vocal Tic Scale (HMVTS) improved. **S:** RCT.

Condition being studied: Tourette syndrome is a neurological condition that causes involuntary movements or vocalizations known as Tourette syndrome. The condition usually starts in childhood and can persist into adulthood.

The exact cause of Tourette syndrome is unknown, but it is believed to be related to abnormalities in the brain. There is also evidence that gene Tourette syndrome play a role in the development of the condition.

While there is no cure for Tourette syndrome, there are treatments available to manage the symptoms. Medications can help to reduce the frequency and severity of Tourette syndrome, and behavioral therapy can help individuals to learn coping strategies and manage their symptoms. Acupuncture has been gradually applied in the clinical treatment of this disease.

Overall, Tourette syndrome can be a challenging condition to live with, but with appropriate treatment and support, individuals with the condition can lead fulfilling lives.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 30 March 2023 and was last updated on 30 March 2023 (registration number INPLASY202330122).

INTRODUCTION

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Overall, Tourette syndrome can be a challenging condition to live with, but with appropriate treatment and support, individuals with the condition can lead fulfilling lives.

METHODS

Participant or population: Pediatric patients (younger than 18 years) with a definite diagnosis of Tourette 's syndrome.

Intervention: Acupuncture combined with drug therapy.

Comparator: Drug therapy alone.

Study designs to be included: Tourette Syndrome Global Scale (TSGS), Yale Global Tic Severity Scale (YGTSS), Hopkins Motor and Vocal Tic Scale (HMVTS) improved.

Eligibility criteria: RCT.

Information sources: The following bibliographic data bases were searched through Ovid interface: Pubmed (from 2000 to Present), EMBASE (from 2000 to Present), CKNi (from 2000 to Present).

Main outcome(s): TSGS, YGTSS and HMVTS.

Quality assessment / Risk of bias analysis: Sensitivity analysis to assess robustness of results and subgroup analysis to determine whether the summary effects vary in relation to clinical characteristics of the trials included are pre-specified. For sensitivity analysis the treatment effects will be examined based on whether TSGS, YGTSS and HMVTS as an outcome was assessed a priori or post hoc. If this was not clear, the assumption that it was considered post hoc was made. In addition, sensitivity analysis, including only those trials free of any assessed bias will be conducted. Two subgroup analyses will also be undertaken: The first to assess if the different sex groups (male, and female) produce different treatment effects; The second to investigate whether acupuncture is equally effective among different evaluation system (TSGS, YGTSS and HMVTS).

Strategy of data synthesis: A data extraction form will be developed based on the Cochrane handbook checklist of items to consider for data collection (section 7.3.a of the handbook). Two authors will independently extract the data from included studies. Disagreements will be resolved by discussion between the two reviewers and reviewing of the trial information. When needed the trial authors will be contacted for clarifications.

Subgroup analysis: Sensitivity analysis to assess robustness of results and subgroup analysis to determine whether the summary effects vary in relation to clinical characteristics of the trials included are pre-specified. For sensitivity analysis the treatment effects will be examined based on whether atrial fibrillation as an outcome was assessed a priori or post hoc. If this was not clear, the assumption that it was considered post hoc was made. In addition, sensitivity analysis, including only those trials free of any assessed bias will be conducted. Two subgroup analyses will also be undertaken: The first to assess if

the different sex groups(male, and female) produce different treatment effects; The second to investigate whether acupuncture is equally effective among different patient groups(TSGS, YGTSS and HMVTS.).

Sensitivity analysis: Two reviewers will independently assess risk of bias based on the following domains from recommendations from the Cochrane handbook: 1. Adequate sequence generation; 2. Allocation concealment; 3. Blinding; 4. Incomplete outcome data and how it was addressed; 5. Selective reporting of the outcome; 6. Any other biases. results of bias assessment will be presented in a figure and a graph indicating low, high or unclear risk of bias for each of the 6 items in each trial. Sensitivity analysis will be conducted based on the bias assessment to assess robustness of results.

Country(ies) involved: China.

Keywords: Acupuncture; Tourette Syndrome; Systematic Review; Meta-analysis.

Contributions of each author:

Author 1 - Kexin Lin - Author 1 drafted the manuscript.