INPLASY PROTOCOL

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Review Stage at time of this submission: **Preliminary searches.**

Conflicts of interest: **NA.**

A comparison of non-invasive and invasive acupuncture in preventing postoperative nausea and vomiting: A protocol for systematic review and Bayesian network meta-analysis

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Review question / Objective: **Acupuncture therapy can prevent postoperative nausea and vomiting, but can non-invasive treatment be comparable to invasive treatment? In this study, the method of Bayesian network meta-analysis will be used to compare the efficacy difference of various acupuncture treatments for postoperative nausea and vomiting, so as to provide evidence for the clinical selection of the dominant regimen.**
Condition being studied: **PONV is not fatal, but when dehydration, electrolyte imbalance and esophageal rupture come across, the situation will nosedive and even cause death. Acupuncture is a worldwide used complementary and alternative medicine therapy, and WHO has recommended that acupuncture can prevent PONV.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 29 June 2020 and was last updated on 29 June 2020 (registration number INPLASY202060108).

INTRODUCTION

Review question / Objective: **Acupuncture therapy can prevent postoperative nausea and vomiting, but can non-invasive treatment be comparable to invasive treatment? In this study, the method of Bayesian network meta-analysis will be used to compare the efficacy difference of various acupuncture treatments for postoperative nausea and vomiting, so as to provide evidence for the clinical selection of the dominant regimen.**

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METHODS

Search strategy: Authors will search PubMed/Medline, Cochrane library, Web of Science, Ebsco, Ovid/Embase, China National Knowledge Infrastructure (CNKI), Wanfang Database, VIP Database and China Biology Medicine disc (CBM) from setup time to April 2020. The search strategy will contain both PONV and acupuncture therapies including "acupuncture," "electroacupuncture," "acupuncture therapy," "PONV," "postoperative nausea and vomiting," "PON," "POV," and similar terms. Search strategy will be adjusted according to various databases.

Participant or population: Inclusion: Adults completed surgery in general anesthesia. Exclusion: Adolescents (under 18 years of age).

Intervention: Any acupuncture therapies will be accepted including acupuncture, moxibustion, electroacupuncture, acupoint injection, acupressure and transcutaneous electric acupoint and so on. Invasive treatment refers to the kind of piercing the skin such as acupuncture and electroacupuncture. Non-invasive treatment refers to the kind of non-piercing the skin such as acupressure and transcutaneous electric acupoint.

Comparator: The following control group will be considered: Placebo: patients accepted sham acupuncture or placebo; Conventional drugs: patients accepted antiemetic drugs such as ondansetron. Usual Care: patients only accepted conventional therapy without any intervention to prevent PONV.

Study designs to be included: Randomised controlled trials.

Eligibility criteria: The review will include randomised controlled trials that were reported in English or Chinese. Only journal articles after peer reviewed will be included.

Information sources: The following databases will be searched from their inception to April 2020: PubMed, Embase, Cochrane Library, Web of Science, EBSCO, China National Knowledge Internet, Wanfang Database, VIP Database and China Biology Medicine disc. Language is restricted in English and Chinese.

Main outcome(s): Incidence of postoperative nausea and/or vomiting and frequency of using antimetics between 0 and 24h.

Additional outcome(s): Generally sepaking, postoperative 6h, 12h, 48h are also common time nodes in PONV study. These time nodes will be taken into considertion as follows. But if enrolled studies less than 5, we won't complete network meta-analysis.

Quality assessment / Risk of bias analysis: Two independent reviewers (Aiqun Song and Qiaochu Zhu) will assess whether the risk of bias for each criterion is considered low risk, high risk or unclear risk, using the Cochrane risk-of-bias tool (ROB 2.0) published in 2019. Disagreements will be resolved by discussion or the third reviewer (Weiping Zhang). We will use the following 5 domains: (1)bias arising from the randomization process (2)bias due to deviations from intended interventions (3)bias due to missing outcome data (4)bias in measurement of the outcome (5)bias in selection of the reported result And taking all bias into consideration, we will give an overall risk of bias.

Strategy of data synthesis: We will use the Addis ,OpenBugs, STATA and R to carry out statistical analysis. We will also use other software if necessary. Risk ratio (RR) or Odds ratio (OR) will be used for the analysis of dichotomous data. In the case of homogeneous data, the fixed-effects model will be used. In the case of

heterogeneity, we will use the random-effects model.

Subgroup analysis: If one of the outcome parameters demonstrates statistically significant differences between intervention groups, we will plan to use subgroup analyses. Planned subgroup analyses will be performed in: age, gender; different surgical sites and so on.

Sensibility analysis: Sensitivity analysis will be accomplished if sufficient studies are available.

Language: English or Chinese.

Country(ies) involved: China.

Keywords: Network meta-analysis; Postoperative nausea and vomiting; Acupuncture therapy.

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