INPLASY

Acupuncture and related acupoint therapies for smoking cessation: a protocol of an overview and updated meta-analysis

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ADMINISTRATIVE INFORMATION

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 25 January 2024 and was last updated on 25 January 2024.

INTRODUCTION

*R*eview question / Objective Acupuncture and related acupoint therapies have been widely used for smoking cessation. Some systematic reviews (SRs) on different therapies have been published. There is a need to summarize and update the evidence of various acupuncture techniques comprehensively for smoking cessation to inform practice and decision-making.

Condition being studied Acupuncture has been used for smoking cessation for more than 40 years in different countries. Acupuncture has been recommended as a complementary and alternative approach for quitting smoking in guidelines, however, it was recognized that further high-quality evidence is needed . Clinical and experimental studies suggest that acupuncture promotes the release of endogenous opioids to relieve withdrawal symptoms11 or suppress the craving for cigarettes after quitting smoking. To our knowledge, historically, traditional acupuncture has generally used filiform needles which penetrate the skin and are manipulated to stimulate acupoints. However, as the development of acupuncture techniques, other acupuncture and related acupoint stimulation therapies have also been used for smoking cessation due to convenience and to enhance compliance, such as acupressure, transcutaneous electrical acupoint stimulation (TEAS) , laser acupuncture , and acupoint catgut embedding (ACE) .

Many systematic reviews (SRs) on acupuncture therapies have been published. Previous SRs have suggested that there was insufficient evidence to confirm the efficacy of acupuncture therapies for smoking cessation. However, the latest SRs suggest that filiform needle acupuncture, and

acupressure may have significant benefit in achieving smoking cessation. In addition to the contradictory findings between these SRs, acupuncture interventions evaluated in these SRs were different and incomplete. It has been acknowledged that an overviews are a valuable tool for clinical decision making since it avoids uncertainty induced by contradictory conclusions from different SRs and also facilitates the discovery of potential evidence gaps. Therefore, an overview was conducted to provide a systematic evaluation of the quality of current evidence and further update the evidence.

METHODS

Search strategy An example of a search strategy for PubMed: "Medicine, Chinese Traditional"[MeSH Terms] OR "Complementary Therapies"[MeSH Terms] OR "acupuncture*"[Title/Abstract] OR "electro stimulation"[Title/Abstract] OR "electric stimulation"[Title/Abstract] OR "auricular*"[Title/Abstract] OR "laser therapy"[Title/Abstract] OR "transcutaneous"[Title/Abstract] OR "acupoint application"[Title/Abstract] OR "acupoint stimulation"[Title/Abstract] OR "auricular point sticking"[Title/Abstract] OR "acupressure*"[Title/Abstract] AND ("smoking cessation"[MeSH Terms] OR "tobacco cessation"[Title/Abstract] OR "quit smoking"[Title/Abstract] OR "stop smoking"[Title/Abstract] OR "cease smoking"[Title/Abstract] OR "nicotine withdrawal"[Title/Abstract] OR "nicotine dependence"[Title/Abstract] OR "tobacco withdrawal syndrome"[Title/Abstract]) AND (("systematic review"[Publication Type] OR "review"[Title/Abstract] OR "meta-analysis"[Title/Abstract] OR "systematic review"[Title/Abstract] OR "meta analysis"[Title/Abstract]) OR ((((randomized controlled trial [Publication Type]) OR (controlled clinical trial [Publication Type]) OR (randomized [Title/Abstract]) OR (placebo [Title/Abstract]) OR (drug therapy [MeSH Subheading]) OR (randomly [Title/Abstract]) OR (trial [Title/Abstract]) OR (groups [Title/Abstract]) OR (crossover or cross-over [Text Word]) OR (pragmatic clinical trial [Publication Type])) NOT (Animals [MeSH Terms] NOT Humans [MeSH Terms]))).

Participant or population The study population are adult cigarettes smokers (18 years and older) regardless of gender, ethnicity, and health status.

Intervention The eligible interventions are acupuncture or acupuncture related therapies; included traditional acupuncture with filiform needles penetrating the skin to stimulate the acupoints with or without manipulations, and other

acupoint stimulation therapies that are not stimulated by the needle but use other acupuncture techniques, such as acupressure, Chinese herbal medicine external use at acupoint, transcutaneous electrical acupoint stimulation (TEAS), laser acupuncture, intradermal needle, fire acupuncture, and acupoint catgut embedding (ACE).

Comparator The eligible comparisons are no intervention, placebo, pharmacotherapy (NRT, bupropion or varenicline), behavioral counseling, or sham acupuncture.

Study designs to be included The study types include systematic reviews and randomized controlled trials (RCTs).

Eligibility criteria The study types include systematic reviews and randomized controlled trials (RCTs). The eligible SRs are based on RCTs or quasi-RCTs. The study population are adult cigarettes smokers (18 years and older) regardless of gender, ethnicity, and health status. The eligible interventions are acupuncture or acupuncture related therapies; including traditional acupuncture with filiform needles penetrating the skin to stimulate the acupoints with or without manipulations, and other acupoint stimulation therapies that are not stimulated by the needle but use other acupuncture techniques, such as acupressure, Chinese herbal medicine external use at acupoint, transcutaneous electrical acupoint stimulation (TEAS), laser acupuncture, intradermal needle, fire acupuncture, and acupoint catgut embedding (ACE). The eligible comparisons are no intervention, placebo, pharmacotherapy (NRT, bupropion or varenicline), behavioral counseling, or sham acupuncture. The primary outcome is continuous abstinence rate defined as smoking cessation between quit day and a follow-up period, or time-point abstinence rate.

Information sources We systematically search systematic reviews, and RCTs from PubMed, the Cochrane Library, EMBASE, Web of Science, China National Knowledge Infrastructure (CNKI), Chinese Scientific Journal Database (VIP), Sino-Med and Wanfang databases from their inception to December 20, 2023.

Main outcome(s) The primary outcome is continuous abstinence rate defined as smoking cessation between quit day and a follow-up period, or time-point abstinence rate, and smoking cessation could be self-reported or biochemically validated.

Additional outcome(s) The secondary outcomes are adverse events.

Quality assessment / Risk of bias analysis The methodological quality of SRs and RCTs will be evaluated independently by two review authors (YJL AND YFL). A measurement tool to assess SRs (AMSTAR-2) will be employed to evaluate the quality of the included SRs. AMSTAR-2 has 16 items with 7 key items, and each of the 16 items can be assessed as "yes", "no", or "partially yes" according to whether the review was appropriately conductedin line with the items. The overall confidence for each systematic review will be evaluated as high, moderate, low or critically low. Cochrane Risk of Bias tool (ROB)will be employed to assess the methodological quality of RCTs from seven domains (random sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessment, incomplete outcome data, selective reporting, and other bias). RCTs could be assessed as low, high or unclear risk of bias in each domain. Discrepancies will be resolved by discussion or judged by a third party (JPL).

Strategy of data synthesis The included SRs and RCTs will be classified by the type of acupuncture and related acupoint therapies. The findings from SRs will be synthesized narratively. The updated meta-analysis will be based on included SRs and unevaluated RCTs in these SRs. Data will be presented as risk ratios (RR) with 95% confidence intervals (CIs). Meta-analysis will be conducted by Cochrane Review Manger 5.4 software, and $I2$ statistic will be utilized to test the statistical heterogeneity 25. The fixed effects model will be applied in meta-analysis when $I2 \leq 30\%$, otherwise the random effects model will be used.

Subgroup analysis We will predefine the subgroup analysis by the duration of follow-ups: short-term (≤ 6 months) versus long-term (≥ 6 months) follow-up. Funnel plots will be generated to detect possible publication bias if 10 or more RCTs are included in a meta-analysis.

Sensitivity analysis Sensitivity analysis will be conducted to explore the influence of the randomization concealment (clear or not) and blindness (blinded or not).

Language restriction There is no language limit.

Country(ies) involved China and UK.

Other relevant information This work is supported by the Youth project of the National

Contributions of each author
Author 1 - Ying-Ying Zhang conceieved the review and drafted the protocol.
Author 2 - You-Zhu Su conducted the search, and involved in screening, data abstraction and quality assessment.
Author 3 - Zi-Yu Tian provided substantive feedbacks on the study design.
Author 4 - Shi-Bing Liang participanted in study design and revised the protocol.
Author 5 - Yi-Jie Liu involved in screening, data abstraction and quality assessment.
Author 6 - Yu-Fei Li involved in screening, data abstraction and quality assessment.
Author 7 - Hai-Fa Qiao provided substantial feedbacks on the drafted protocol.
Author 8 - Nicola Robinson revised the drafted protocol.
Author 9 - Jian-Ping Liu provided substantial feedbacks in the study design and revised the drafted protocol.