INPLASY PROTOCOL

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

Conflicts of interest: None declared.

Acupuncture treatment for respiratory diseases: A systematic review and meta-analysis

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Review question / Objective: To evaluate the effect of acupuncture on respiratory disease. the randomized controlled trials of acupuncture in treatment of respiratory disease including chronic obstructive pulmonary disease(COPD), Bronchial Asthma, Allergic Asthma. We searched MEDLINE, Pubmed and the Cochrane databases of randomized control trials published up until October 31, 2021. We included randomized trials of acupuncture treatment versus either sham acupuncture or conventional treatment or traditional Chinese medicine for respiratory diseases, including chronic obstructive pulmonary disease(COPD), Bronchial Asthma, Allergic Asthma.

Condition being studied: Acupuncture has been widely recommended to treat respiratory diseases in China. However, current research is widely focused on acupuncture for copd and asthma. Our objective was observed the changes of lung function, quality of life and other indicators of the above diseases by acupuncture, to determine the effect size of acupuncture on respiratory diseases.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 18 November 2021 and was last updated on 18 November 2021 (registration number INPLASY2021110072).

INTRODUCTION

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METHODS

Participant or population: The patient was diagnosed with chronic obstructive pulmonary disease(COPD), Bronchial Asthma, Allergic Asthma.

Intervention: Acupuncture therapy as the main treatment, including acupuncture, auricular acupuncture, electropuncture, scalp acupuncture,warm acupuncture, dry needling, acupoint injection, moxibustion, acupressure, acupoint embedding and so on.

Comparator: Non-acupuncture therapy, including western medicine, traditional Chinese medicine, surgery, conventional treatment, placebo, sham acupuncture, waiting treatment group or no treatment. sham acupuncture, conventional treatment, traditional Chinese medicine.

Study designs to be included: Randomized controlled trials will be included

Eligibility criteria: The patient was diagnosed with chronic obstructive pulmonary disease(COPD), Bronchial Asthma, AllergicAsthma.

Information sources: The following databases will be searched: Chinese database including CNKI, WanFang Data, VIP and English database including Web of Science, the Cochrane Central Registry of Controlled Trials randomized trials,

EMBASE, MEDLINE, ISI Web of Knowledge. The literature search will be constructed around search terms for acupuncture therapy, search terms for respiratory system diseases including copd, asthma and so on, searching terms for randomized controlled trial and adapted for each database as necessary.

Main outcome(s): FEV1.

Additional outcome(s): Pulmonary function (FEV1,FVC,PEF,FEV1/FVC,MVV) Eosinophils (CD3+,CD4+,CD8+)Quality of life(SF-36,SF-12),SGRQ,Borg scale score,Arterial blood gas analysis (SaO2, %), 6-min walk distance, CAT, effective rate.

Quality assessment / Risk of bias analysis: The Cochrane risk of bias tool (www.cochrane-handbook.org.) will be used to assess the risk of bias independently by two reviewers, including the following items: random sequence generation, allocation concealment, blind subjects, blind therapists and assessors, incomplete outcome data, selective outcome reporting and other bias. The risk of bias will be categorized as low (meet all criteria) / unclear (trials with insufficient information to judge) / high risk (meet none of the criteria) of bias. In case of disagreements, two reviewers will resolve through discussion or a third reviewer will be involved. Two reviewers will independently assess the quality of outcomes using GRADE. Disagreements will be resolved by discussion between two authors or consulting the expert.

Strategy of data synthesis: The relative risk (RR) will be used to analyze dichotomous outcomes. The mean difference (MD) will be used to analyze continuous outcomes with the same unit. Otherwise, the standardized mean difference (SMD) will be used. The uncertainty will be expressed with 95% confidence intervals (95%CI). We will measure heterogeneity using the I^2 statistic. Fixed-effects model (FEM) will be used if heterogeneity is found. Random-effect model (REM) will be used where

significant statistical heterogeneity exists. Heterogeneity will be further explored using meta-regression with backward elimination to analyze the associations between treatment effect and the participant characteristics. Funnel plot will be used to examine the potential for publication bias. Results will be described qualitatively in the text when meta-analysis is not possible.

Subgroup analysis: To investigate potential heterogeneity across studies, we will conduct subgroup analysis based on different diseases, length of the diseases, and different kind of acupuncture therapy.

Sensitivity analysis: The relative risk (RR) will be used to analyze dichotomous outcomes. The mean difference (MD) will be used to analyze continuous outcomes with the same unit. Otherwise, the standardized mean difference (SMD) will be used. The uncertainty will be expressed with 95% confidence intervals (95%CI). We will measure heterogeneity using the I^2 statistic. Fixed-effects model (FEM) will be used if heterogeneity is found. Random-effect model (REM) will be used where significant statistical heterogeneity exists. Heterogeneity will be further explored using meta-regression with backward elimination to analyze the associations between treatment effect and the participant characteristics. Funnel plot will be used to examine the potential for publication bias. Results will be described qualitatively in the text when meta-analysis is not possible.

Country(ies) involved: China.

Keywords: acupuncture treatment, respiratory diseases, COPD, asthm.

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