INPLASY PROTOCOL

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None declared.

Auricular point pressing therapy for obstructive sleep apnea hypoventilation syndrome: A protocol for systematic review and meta-analysis

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Review question / Objective: **Patients with obstructive sleep apnea hypoventilation syndrome (OSAHS) suffer from repeated hypoxemia, hypercapnia, and sleep structure disorders at night, leading to daytime lethargy and complications of heart, brain, lung, and blood vessel damage, which seriously affect their quality of life and life span. Clinical studies have shown that auricular point pressing therapy has an excellent therapeutic effect on OSAHS, and has the potential to be a complementary and alternative therapy for patients with OSAHS. Currently, systematic reviews and meta-analyses evaluating the efficacy and safety of electroacupuncture for the treatment of OSAHS are lacking. This study aimed to address this deficiency.**

Information sources: **RCTs of auricular point pressing therapy in the treatment of OSAHS were searched in the Web of Science, PubMed, Cochrane Library, Embase, Allied and Complementary Medicine Database (AMED), China Science and Technology Journal Database (VIP), China National Knowledge Infrastructure (CNKI), and Wan-Fang Database. The retrieval time is from database construction to the present.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 03 May 2022 and was last updated on 03 May 2022 (registration number INPLASY202250015).

INTRODUCTION

Review question / Objective: **Patients with obstructive sleep apnea hypoventilation syndrome (OSAHS) suffer from repeated hypoxemia, hypercapnia, and sleep structure disorders at night, leading to daytime lethargy and complications of heart, brain, lung, and blood vessel damage, which seriously affect their quality**

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Rationale: In recent years, an increasing number of researchers have used auricular point pressing therapy to treat OSAHS and achieved good results.[10-15] However, a systematic review of the efficacy and safety of auricular point pressing therapy in OSAHS treatment is still lacking. Therefore, it is essential to conduct a systematic evaluation to obtain relatively convincing conclusions regarding whether auricular point pressing therapy can be a good choice as a CAM therapy for OSAHS. Randomized controlled trials (RCTs) of auricular point pressing therapy in the treatment of OSAHS were searched for eight electronic resource databases. Two independent reviewers will search the database for relevant RCTs, extract data, and evaluate the quality of the included RCTs. We will use Review Manager 5.3 software for heterogeneity assessment, meta-analysis, and subgroup analysis. We will reporting biases assessment and sensitivity analysis to evaluate the reliability and stability of the results.

Condition being studied: Randomized controlled trials (RCTs) are eligible if the blind method is specifically described. There were no restrictions on language. Moreover, systemic evaluation, review literature, and full articles that can not be obtained will be excluded.

METHODS

Search strategy: RCTs of auricular point pressing therapy in the treatment of OSAHS were searched in the Web of Science, PubMed, Cochrane Library, Embase, Allied and Complementary Medicine Database (AMED), China Science and Technology Journal Database (VIP), China National Knowledge Infrastructure (CNKI), and Wan-Fang Database. The retrieval time is from database construction to the present. The retrieval strategy adopted a combination of subjects and free words. The search strategy was as follows using PubMed as an example
#1 obstructive sleep apnea hypoventilation syndrome[ti, ab]
#2 obstructive sleep apnea [ti, ab]
#3 sleep apnea[ti, ab]
#4 OSAHS[ti, ab]
#5 OSA[ti, ab]
#6 #1 or #2-5
#7 auricular point pressing therapy[ti, ab]
#8 auricular point sticking therapy[ti, ab]
#9 auricular-plaster therapy[ti, ab]
#10 auricular point[ti, ab]
#11 #7 or #8-10
#12 randomized controlled trials[ti, ab]
#13 randomized trials [ti, ab]
#14 controlled clinical trials[ti, ab]
#15 #12 or #13-14
#16 #6 and #11 and #15.

Participant or population: Patients should be clearly diagnosed with OSAHS. No restrictions on age, sex, and race were imposed.

Intervention: Patients with OSAHS in the experimental groups mainly received auricular point pressing therapy, including the use of semen vaccariae, drugs, magnetic beads, and other materials.

Comparator: Patients with OSAHS in the control group received no specific treatment or received placebo, drugs, or nCPAP therapy.

Study designs to be included: Randomized controlled trials (RCTs).

Eligibility criteria: 2.1.1. Types of studies. Randomized controlled trials (RCTs) are eligible if the blind method is specifically described. There were no restrictions on language. Moreover, systemic evaluation, review literature, and full articles that can not be obtained will be excluded.2.1.2. Types of participants. Patients should be clearly diagnosed with OSAHS. No

restrictions on age, sex, and race were imposed.2.1.3. Type of interventions2.1.3.1. Control interventions. Patients with OSAHS in the control group received no specific treatment or received placebo, drugs, or nCPAP therapy.2.1.3.2. Experimental interventions. Patients with OSAHS in the experimental groups mainly received auricular point pressing therapy, including the use of semen vaccariae, drugs, magnetic beads, and other materials.2.1.4. Types of outcome measures2.1.4.1 Primary outcomes. Apnea-hypopnea index (AHI), minimal oxygen saturation (SaO2min), and longest apnea time.2.1.4.2. Secondary outcomes. Epworth Sleepiness Scale (ESS), Montreal Cognitive Assessment (MoCA), and adverse events.2.1.1. Types of studies. Randomized controlled trials (RCTs) are eligible if the blind method is specifically described. There were no restrictions on language. Moreover, systemic evaluation, review literature, and full articles that can not be obtained will be excluded.2.1.2. Types of participants. Patients should be clearly diagnosed with OSAHS. No restrictions on age, sex, and race were imposed.2.1.3. Type of interventions2.1.3.1. Control interventions. Patients with OSAHS in the control group received no specific treatment or received placebo, drugs, or nCPAP therapy.2.1.3.2. Experimental interventions. Patients with OSAHS in the experimental groups mainly received auricular point pressing therapy, including the use of semen vaccariae, drugs, magnetic beads, and other materials.2.1.4. Types of outcome measures2.1.4.1 Primary outcomes. Apnea-hypopnea index (AHI), minimal oxygen saturation (SaO2min), and longest apnea time.2.1.4.2. Secondary outcomes. Epworth Sleepiness Scale (ESS), Montreal Cognitive Assessment (MoCA),, and adverse events.

Information sources: RCTs of auricular point pressing therapy in the treatment of OSAHS were searched in the Web of Science, PubMed, Cochrane Library, Embase, Allied and Complementary Medicine Database (AMED), China Science and Technology Journal Database (VIP), China National Knowledge Infrastructure (CNKI), and Wan-Fang Database. The retrieval time is from database construction to the present.

Main outcome(s): Apnea-hypopnea index (AHI), minimal oxygen saturation (SaO2min), and longest apnea time.

Additional outcome(s): Epworth Sleepiness Scale (ESS), Montreal Cognitive Assessment (MoCA), and adverseevents.

Data management: Two researchers will import all the retrieved articles into Endnote X9, and filter and delete duplicate data. Two researchers will screen the literature according to inclusion and exclusion criteria. (Figure 1). The first author, publication year, baseline characteristics of subjects, intervention methods, outcome measures, and other related information will extract independently by two researchers. After the above results are extracted, a crosscheck is required.

Quality assessment / Risk of bias analysis: The risk of bias was assessed by two reviewers according to the Bias Risk Assessment Tool recommended in the Cochrane Manual.

Strategy of data synthesis: Review Manager (RevMan), version 5.3, was used to analyze the collected clinical research data. Relative risk (RR) was used to evaluate the enumeration data, and standardized mean difference (SMD) was used to evaluate the measurement data. The confidence interval (95% confidence interval, CI) was 95%. If heterogeneity among the included studies was minor (I2<50%), the fixed-effects model was used for analysis. If heterogeneity was significant among the included studies (I2≥50%), the random-effects model was used for the analysis. [17.18] A value of P<0.10 was considered to suggest statistical heterogeneity.

Subgroup analysis: We will conduct subgroup analyses based on different interventions in the control group. This can analyze the sources of heterogeneity and

enhance the persuasiveness of the conclusions.

Sensitivity analysis: We will conduct a sensitivity analysis by eliminating studies one by one to investigate the reliability and stability of the results.

Language: Chinese and English. There were no restrictions on language.

Country(ies) involved: China.

Keywords: protocol, obstructive sleep apnea hypoventilation syndrome, systematic review, auricular point pressing therapy.

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