INPLASY PROTOCOL

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None declared.

Effectiveness of acupuncture and related techniques for simple obesity: A systematic review and network meta-analysis with randomized controlled trials

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Review question / Objective: **To evaluate the efficacy of different acupuncture and related techniques in the treatment of simple obesity**
Information sources: **We searched articles in eight database including: CNKI, Wanfang, VIP, CBM, PubMed, Embase, Cochrane Library and web of science. All the publications, with no time restrictions, will be searched without any restriction of countries or article type. Reference list of all selected articles will independently screened to identify additional studies left out in the initial sea.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 02 July 2021 and was last updated on 02 July 2021 (registration number INPLASY202170004).

INTRODUCTION

Review question / Objective: **To evaluate the efficacy of different acupuncture and related techniques in the treatment of simple obesity.**

Condition being studied: **The incidence of obesity worldwide showed an upward trend year after year, has gradually become the world's public health problems serious harm to public health. According to World Health Organization data in 2016 (WHO), more than 1.9 billion adults (18 years and older) were overweight.Simple obesity refers to obesity without organic diseases or special causes, it is mainly related to over nutrition, genetic factors and unhealthy lifestyles. As we know, simple obesity is a high-risk factor for many**

diseases, such as coronary heart disease, type 2 diabetes, osteoporosis, hypertension, etc. Moreover, obesity not only affects the reproductive ability of women and men, leading to infertility, but also increases pregnancy complications and adversely affects their offspring. In addition, treatment of obesity has brought huge economic burden. According to reports, taking into account the impact of overweight and obesity diseases (especially diabetes, heart disease, stroke and cancer), by 2030, the cost of treatment is estimated to increase by $ 4.8 billion / year in the United States.Therefore, choosing a simple, safe and effective complementary and alternative therapies to reduce the burden of obese patients are an important issue that needs to be solved urgently.Acupuncture, a kind of external treatment of traditional Chinese medicine, has been widely used in the treatment of simple obesity. Electric acupuncture, catgut embedding, warming acupuncture, and auricular acupuncture are all forms of acupuncture, which play a certain role by stimulating acupuncture points.Network meta-analysis is an extension of traditional meta-analysis. It can compare 3 or more interventions and rank the effects of different interventions to provide the best clinical diagnosis and treatment plan. Therefore, this study used a network meta-analysis to compare the efficacy of acupuncture and its related therapies in the treatment of simple obesity, in order to provide certain guidelines for clinical treatment.

METHODS

Search strategy: We searched the eight databases including PubMed, Embase, Cochrane Central Register of Controlled Trials, web of science, CNKI, VIP, Wanfang and CBM. The search terms included simple obesity, acupuncture therapy, ear stimulation, acupoint catgut embedding, electroacupuncture and warming acupuncture.

Participant or population: Patients diagnosed with simple obesity and have clear diagnostic criteria.

Intervention: Interventions including acupuncture and related techniques with or without lifestyle intervention, such as classical acupuncture, electric acupuncture, warming acupuncture, ear acupoint stimulation, and acupoint catgut embedding, lifestyle modification(exercise or diet), placebo.

Comparator: Interventions including acupuncture and related techniques with or without lifestyle intervention, such as classical acupuncture, electric acupuncture, warming acupuncture, ear acupoint stimulation, and acupoint catgut embedding, lifestyle modification(exercise or diet), placebo.

Study designs to be included: Only randomized controlled trials will be included in this study.

Eligibility criteria: Randomized clinical trials will be included irrespective of blinding, publication status or language.

Information sources: We searched articles in eight database including: CNKI, Wanfang, VIP, CBM, PubMed, Embase, Cochrane Library and web of science. All the publications, with no time restrictions, will be searched without any restriction of countries or article type. Reference list of all selected articles will independently screened to identify additional studies left out in the initial sea.

Main outcome(s): The mean and standard deviation of the body mass index difference between before and after treatment.

Additional outcome(s): The mean and standard deviation of the weight difference between before and after treatment and the mean and standard deviation of the waist circumference difference between before and after treatment.

Data management: (1) NoteExpress and Excel software were used to extract data. (2) Different researchers separately screened the titles and abstracts of records acquiaed potential eligibility which came from the electronic databases.Full texts

screening and data extraction were conducted afterwards independently.Any disagreement was resolved by discussion until consensus was reached or by consulting a third author. In this step, we used NoteExpress. (3)The following items were extracted from the included studies: Publication time, author, sample size, age, gender, intervention measures, intervention time, randomization method, blinding method, efficacy evaluation criteria (weight, BMI and waist circumference), dropout rate, adverse events.

Quality assessment / Risk of bias analysis: The Cochrane systematic review of the risk of bias evaluation tool and Revman 5.3 software were used to evaluate the quality of the included literature. The six items of the quality evaluation were selection bias, performance bias, detection bias, attrition bias, reporting bias and other bias.

Strategy of data synthesis: ADDIS1.16.6 software was used for data analysis. ADDIS is a software that uses Bayesian framework and Markov Chain Monte Carlo (MCMC) to perform a priori evaluation and processing of data. Use the node cutting method provided by ADDIS software to evaluate whether direct evidence is consistent with indirect evidence, If P>0.05, select a consistency model for data analysis. Use potential scale reduction factor (PSRF) for convergence assessment, If the PSRF value is closer to 1, the better the convergence effect is. Calculate the ranking probability of intervention measures based on the Bayesian network model to determine the intervention measures with the best curative effect. The outcome indicators in this paper are continuous variables, which are expressed by standard mean difference (SMD), and 95% confidence interval (95% CI), respectively. Using Stata14.2 software to draw the network diagram.

Subgroup analysis: No subgroup analysis was performed.

Sensitivity analysis: Using the node cutting method provided by ADDIS software to evaluate whether direct evidence is consistent with indirect evidence, If P>0.05, select a consistency model for data analysis.

Language: No restriction on language.

Country(ies) involved: China.

Keywords: acupuncture therapy; warming acupuncture; network meta analysis; body mass index; waist circumference.

Dissemination plans: We plan to publish a systematic review based on this protocol.

Contributions of each author:

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