

# INPLASY

## Efficacy and safety of acupuncture for patients with pruritus: A systematic review and meta-analysis

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### ADMINISTRATIVE INFORMATION

**Support** - This work is being supported by Science and technology research project of Sichuan Administration of Traditional Chinese Medicine. Project number: 2021MS320.

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

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY202380043

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 10 August 2023 and was last updated on 10 August 2023.

### INTRODUCTION

**Review question / Objective** What are the therapeutic effects of acupuncture treatment for pruritus ?

**Condition being studied** Introduction: Itching is an unpleasant sensation of the skin that causes a desire to scratch. Itching is defined as an "unpleasant sensation that elicits the desire to scratch" and is the most common subjective symptom in many diseases. The definition of itching was first proposed 350 years ago by German doctor Samuel Hafenreffer and is a specific skin sensation that can trigger the urge to scratch and the scratching reflex, which can be caused by various skin and systemic diseases. Itching is the most common symptom and cause of distress in many skin diseases and some systemic diseases. It can be classified as acute or chronic itching. Chronic itching is not only a common symptom of skin diseases but also occurs in some systemic diseases, lasting for more

than 6 weeks and severely reducing the patient's quality of life. A large cross-sectional study conducted in Germany on 11,730 adults aged 16-70 showed similar results, with a prevalence of chronic itching at 16.8%. Some believe that the prevalence of chronic itching increases with age, with data showing an increase from 12.3% in the age group of 16-30 to 20.3% in the age group of 61-70. Yosipovitch et al. proposed categorizing itching into four types: 1. Pruritoceptive itch (itch originating from the skin), 2. Neuropathic itch (itch originating from nerve diseases), 3. Neurogenic itch (itch originating from the nervous system), and 4. Psychogenic itch (itch originating from psychological factors). The clinical treatment of itching is challenging, and currently, there is no specific method. The main treatments include antihistamines, corticosteroids, calamine lotion, capsaicin, and immunomodulatory therapy. However, prolonged use of antihistamines can cause drowsiness, and prolonged use of corticosteroids can lead to skin depigmentation, skin capillary dilation, and skin atrophy. Local

calcium channel phosphatase inhibitors, local cannabinoids, and prostaglandin inhibitors are also commonly used for the treatment of chronic itching but are often limited by adverse reactions and rapid recurrence of itching after treatment interruption. Due to the limitations of these main treatment methods in completely controlling itching symptoms, other effective and safe treatment methods are needed. Supplementary and alternative therapies have been used due to the limitations of traditional treatments, and numerous studies have confirmed that acupuncture has varying degrees of inhibitory effects on itching. Acupuncture can not only alleviate histamine-dependent acute itching and chronic itching in patients with uremia but also effectively relieve type I allergies and neuropathic itching. However, there is still a lack of systematic reviews evaluating the effectiveness of acupuncture in treating itching, and existing studies lack uniform efficacy criteria and high-quality randomized controlled trials. Therefore, the purpose of this systematic review is to conduct a systematic literature search of all published randomized controlled trials, evaluate the evidence of the effectiveness and safety of acupuncture in treating itching, and compare the efficacy of acupuncture with placebo acupuncture and control groups. The purpose of this study is to conduct a systematic review and meta-analysis of the literature to evaluate the therapeutic effect of acupuncture treatment for pruritus.

## METHODS

### Search strategy

#1 Pruritus  
 #2 Pruritis  
 #3 Itching  
 #4 or /1-3  
 #5 Acupuncture  
 #6 Pharmacopuncture  
 #8 Acupuncture therapy  
 #9 Acupuncture Treatment  
 #10 Acupuncture Treatments  
 #11 Pharmacoacupuncture Treatment  
 #12 Pharmacoacupuncture Therapy  
 #13 Pharmacoacupuncture  
 #14 electroacupuncture  
 #15 Acupotomies  
 #16 Acupotomy  
 #17 or /5-15  
 #18 randomized controlled trial  
 #19 randomized controlled trial [ Publication Type ]  
 #20 randomized [ Title / Abstract ]  
 #21 placebo [ Title / Abstract ]  
 #22 or /17-20  
 #23 4 and 16 and 21.

**Participant or population** Adult patients who were clinically diagnosed with itching.

**Intervention** Acupuncture alone.

**Comparator** Acupuncture, corticosteroids, and antihistamine drugs.

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

**Eligibility criteria** (1) All articles should be limited to skin itching only and must include analysis methods and the severity of itching; (2) The publication language should be Chinese or English; (3) The study design should be a randomized controlled trial (RCT); (4) The main intervention methods should be acupuncture, acupoint stimulation, electroacupuncture, fire needling, etc. Studies were excluded if:: (1) Animal experiments; (2) Articles without randomized controlled trials, such as retrospective studies, reviews, and case reports; (3) Some specific treatment methods, such as bee venom acupuncture; (4) Lack of relevant data to evaluate itching; (5) Use of incorrect randomization methods, with only abstracts lacking full text; (6) Studies with incomplete reporting of important information and no response from the authors; (7) Use of other intervention methods; (8) Studies from the same institution reporting similar results.

**Information sources** Our systematic review included a literature search of PubMed, MEDLINE, Embase, Cochrane Central Register of Controlled Trials (CENTRAL), Web of Science, China Science Journal Database (VIP), China National Knowledge Infrastructure (CNKI), Wanfang Data and China Biomedical Literature Database (CBM), from their inception to May 1, 2023. Key search terms included Acupuncture, Acupuncture therapy, acupuncture, Acupuncture Treatment, Pharmacopuncture, Pruritus, Pruritis, Itching (Table 1). minor modifications have been made to the search strategy to be used across multiple databases.

### Main outcome(s)

1. visual analogue scale
2. Therapeutic effectiveness
3. Treatment recovery rate
4. Recurrence rate.

**Additional outcome(s)** Adverse events.

**Data management** Two reviewers will independently review the titles and abstracts of the

studies retrieved in the searches to identify relevant studies for inclusion.

We will record the selection process in sufficient detail to complete a PRISMA flow diagram.

Two reviewers will then independently extract the following information from the studies selected for inclusion: authors, year of publication, country, age distribution, gender proportion, study design, intervention condition, diagnosis, intervention period, and outcome measures. If there are disagreements between the two reviewers, a third reviewer will be consulted to determine the final result.

**Quality assessment / Risk of bias analysis** Two reviewers will independently evaluate the quality of the selected studies according to the Cochrane Collaboration's tool for randomized control trials. Items will be evaluated in three categories: low risk of bias, unclear risk of bias and high risk of bias. The following characteristics will be assessed: random sequence generation (selection bias), allocation concealment (selection bias), blinding of participants and personnel (performance bias), blinding of outcome assessment (detection bias), incomplete outcome data (attrition bias), selective reporting (reporting bias), and other biases. Results from these questions will be graphed and assessed using Review Manager 5.3.

**Strategy of data synthesis** The meta-analyses will be performed by the Review Manager 5.3 software. The dichotomous variables will be assessed by risk ratios (RR) with 95% confidence intervals (95% CIs) and continuous variables will be analyzed with standard mean difference (SMD) with 95% CIs. Between-study heterogeneity will be assessed using  $\chi^2$  test and  $I^2$  statistic, and substantial heterogeneity is considered when  $I^2$  is  $>50\%$ . The random effects model will be applied to estimate the summary RR, SMD and 95% CIs. Outcomes will be calculated using P values and  $P < 0.05$  is considered statistically significant. A sensitivity analysis will be performed to ascertain the results of the meta-analysis by excluding each of the individual studies. Publication bias will be assessed by a funnel plot for meta-analysis, if more than 10 studies were included.

**Subgroup analysis** If the necessary data are available, analysis will be done according to acupuncture alone or combined with corticosteroids, different control groups, and different treatment duration.

**Sensitivity analysis** A sensitivity analysis will be performed to ascertain the results of the meta-

analysis by excluding each of the individual studies.

**Language restriction** Chinese or English.

**Country(ies) involved** China.

**Keywords** acupuncture, Itchiness, systematic review, meta-analysis.

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