

Protocol

Acupoint stimulation for post-stroke spasticity: a systematic review protocol*

穴位刺激治疗中风后痉挛状态的系统评价研究方案*

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ABSTRACT

This systematic review is aim to comprehensively evaluate the efficacy of acupoint stimulation in managing of post-stroke spasticity. The eligible randomized controlled clinical trials (RCTs) and quasi-randomized controlled clinical trials (quasi-RCTs) will be searched from the following databases: the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE, China National Knowledge Infrastructure (CNKI), Chinese Scientific Journal Database (VIP), Wanfang Database, Chinese BioMedical Literature Database (CBM). The Cochrane risk of bias tool will be used to assess the trials. No patients or their family will be bothered in this systematic review, so there is no need for the permission of institutional review board (IRB). The completed systematic review will be published in a peer-reviewed journal.

KEY WORDS: point; acupoint; post-stroke; spasticity; systematic review

INTRODUCTION

Stroke is a commonly seen problem causing death and also one of the major causes of long-term disabilities worldwide^[1-3]. Post-stroke spasticity is one of most common sequelae of stroke^[4]. It has been reported that equivalent to 20%–42% of stroke survivors are subjected to abnormal hypertonia^[5-10]. Performing as over excitation of the lower motor center, spasticity is ascribed to the damage of upper motor neuron center or pathway, where inhibition to the former is interrupted^[11]. The main manifestations

of spasticity after stroke are the flexion and adduction on the upper limbs, fixed stretching on the lower limbs, and increased resistance during the movement. Articular contracture and malformation would take place if there were no effective treatment. All above would affect the patients' self-care ability and quality of daily life seriously^[12-13], which also be disadvantaged to bring patients with hypermyotonia into early intervention of rehabilitation^[14-15]. Therefore, reducing muscle tension is the key point of treatment for stroke patients.

The current approaches which are mainly used for treating post-stroke spasticity comprise pharmacological agents, physical therapy (kinesitherapy, cryotherapy, ultrasound, electrical and vibratory stimulation, and biofeedback, et al.)^[16-21], and surgical therapy. Although these interventions for managing spasticity have been recommended, the efficacy of other rehabilitation therapies used either separately or in combination also remains to be proved by compelling evidence^[22], and the effect of pharmacological agents is still being observed, and of which side effects cannot be eliminated^[23]. Thus, utilitarian measures featured by safe and effective to replace conventional interventions managing the spasticity patients after stroke are urgently necessary.

A series of articles have demonstrated that acupuncture (including electroacupuncture, cutaneous needle, abdomen acupuncture, scalp acupuncture), moxibustion, transcutaneous electrical stimulation on acupuncture points, as well as massage could be beneficial to rehabilitation of post-stroke spasticity^[24-33], and all the modalities mentioned above can be categorized as acupoint stimulation in TCM. In fact, acupoint stimulation be used in stroke patients for many centuries in China, and many decades in the West^[34]. Researchers have found that acupoint stimulation could lower down the post-stroke hypermyotonia by coordinating the balance of tension among muscular group^[35], improving brain blood circulation by promoting the development of collateral circulation^[36], and affecting spinal sensitization^[37] as well as expression of receptors^[38]. However, the definite conclusion regarding to these interventions is needed, additionally, based on our searched consider revising, there is no systematic review focusing on acupoint stimulation for patients of post-stroke spasticity. The role of acupoint stimulation as a whole in treating abnormal hypertonia after stroke is not completely evaluated. Therefore, in order to fill this void, we turn to design a systematic review and meta-analysis on the efficacy of acupoint stimulation for post-stroke spasticity patients.

OBJECTIVES

This systematic review is aim to evaluate the efficacy of acupoint stimulation in managing of post-stroke spasticity.

METHODS AND ANALYSES

Study registration

This protocol of systematic review has

been registered on PROSPERO (number: CRD42014013296) http://www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD42014013296^[39], the review reporting will follow the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement guidelines^[40].

Study design

(1) Types of studies

Published randomized controlled clinical trials (RCTs) and quasi-randomized controlled clinical trials (quasi-RCTs), comparing any form of acupoint stimulation with/without additional treatment against placebo or sham or no treatment or same additional treatment will be included in the review. Cross-over RCTs will be excluded in this review.

(2) Types of participants

Patients of any gender, age, race or nationality suffered from stroke, including ischemic stroke and hemorrhagic stroke, and were in the stage of spasticity.

(3) Types of interventions

Trials comparing any form of acupoint stimulation (acupuncture, acupressure, massage, electric stimulation, moxibustion, cupping, acupoint injection, acupotomy, wrist band stimulation, catgut-embedding, magnet stimulation, laser-irradiation, et al.) as the sole intervention or as an adjunct to other treatments with the accompanied treatments or placebo, or sham, or blank group, regardless of the treatment duration and manipulations will be included in the review. Those trials that compared different kinds of acupoint stimulation or adopted a combination therapy without assessing the sole effect of acupoint stimulation will be unconcerned.

(4) Types of outcome

Primary outcomes^[41-43]

- a. Ashworth Scale;
- b. Modified Ashworth Scale;
- c. Modified Modified Ashworth Scale;

Secondary outcomes^[44-48]

- a. Modified Tardieu Scale;
- b. Fugel-Meyer Motor Assessment Scale (FMA);
- c. Activity of Daily Living (ADL);
- d. Barthel Index (BI);
- e. The quality of life (QoL);
- f. Brunnstrom recovery stages;
- g. Neurological deficit evaluation (ND);
- h. Any recorded adverse events;

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