



Assessment of Meta-Analysis: Systematic Review on Acupuncture Therapy for Post Stroke Depression (PSD)

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Abstract

A large number of studies have been conducted on the treatment of post stroke depression with acupuncture. The purpose of this study was to review the published review literature about the efficacy of acupuncture for treating depression in stroke survivors. Electronic databases (PubMed/MEDLINE (National Library of Medicine), CENTRAL (the Cochrane Library), Google Scholar, Science Direct, and China Academic Journals Full-text Database (CNKI)), have been used for terms “meta-analysis”, “systematic review acupuncture” OR “electro acupuncture” and Post stroke depression”. Out of 2302 studies, 2 systematic reviews covering 2525 participants were selected for analysis. The review articles included in this study were methodologically high qualified (OQAQ score ≥ 7 and AMSTAR score ≥ 9) denoting acupuncture can treat the post-stroke depression in comparison to an antidepressant with fewer side effects. Acupuncture may benefit the patients who are suffering from post-stroke depression but for a strong recommendation of clinical usage more high-quality studies needed.

Keywords: Systematic review; Post stroke depression; Acupuncture

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Introduction

Although now it is more than a century that post stroke depression (PSD) has been recognized, the earliest systematic studies appeared at the 1970s. Depression is one of the emotional disturbance after stroke with the prevalence of 35% to 50% among stroke patients [1]. The fact that 32% of stroke survivors even after excellent functional recovery continue to have depression 2 to 3 years later [2], highlights the importance of inclusion of solutions for this disorder in the treatment plan.

Generally, post stroke depression remains undetected due to difficult diagnosis in acute and chronic phase occurrence [3]. There are several reasons matter PSD, among them are impeding rehabilitation, increasing mortality and suicidal thoughts, injures, cognitive and physical dysfunctions [4]. Further, there are shreds of evidence revealing that the episode of worsening disability in those patients who treated their depression following the stroke, were less likely to happen [5]. In spite of the high rate of prevalence, the source and origin of PSD are remained unclear and controversial among different scholars. Some suggested that half of PSD occurrences is connected with the location of injury [6]. While others argued that the occurrence of PSD is higher in patients with the background of psychiatric or depressive disorder [7]. Treatment of post-stroke depression mostly is based on antidepressants and psychotherapy, although the efficacy of these and side effects remained controversial [8]. Acupuncture is an accepted parallel treatment in stroke patients [9]. According to Traditional

Chinese medicine, through needle insertion Qi flow (vital energy of the body) which due to illness have been disturbed, will repair [10]; although there are shreds of evidence which demonstrate the effectiveness of acupuncture in post stroke rehabilitation [11] and depressive disorders [12] with fewer side effects. Regarding increasing number of stroke patients and the effect of PSD on the occupational performance and social dimensions of the stroke survivor's life, recognizing the effectiveness of safety interventions is essential.

There is a number of systematic reviews for examining the efficacy of acupuncture in the treatment of depression but the purpose of this study was to summarize and analyze the studies examining the efficacy of acupuncture for post stroke depression relief.

Methods

Criteria for Inclusion: The inclusion and exclusion criteria were according to *the PICOS* approach; The Population, Intervention, Comparator, Outcome and Study design (PICOS) has been used to enclose our research objective.

Study Design: Systematic review/meta-analysis studies with at least one RCT were included in this study.

Study Participants: Adults, regardless of age, sex, with hemorrhagic or ischemic stroke, in any phase and severity (including patients with cerebral infarction, intracerebral hemorrhage, cerebral embolism, or unclassified stroke). To be eligible for inclusion, studies had to refer to a clinical diagnosis [1] diagnosed via brain

computed tomography (CT) scan or brain magnetic resonance imaging (MRI) [2] diagnosed clinically according to the World Health Organization definition (rapidly developing focal or global disturbances of cerebral function which lasts more than 24 hours or resulting in death, with no other apparent cause of vascular origin), regardless of neurological deficit severity. Literature about cases with diagnoses of bipolar disorder, dysthymia and depressive disorder due to another medical condition, or schizophrenia, alone or along with depression, were excluded.

Intervention: What included in this research is acupuncture (traditional at meridian points, needle, and electro-acupuncture), integrative or combined medicine for post stroke depression, while acupressure, point injection, laser acupuncture, and dry needling excluded.

Comparison: A wide range of control interventions considered which included but not limited to sham acupuncture, placebo, Western treatments, standard care, waitlist control and not treatment.

Outcomes: Studies that reported one or more of the following outcomes, PSD symptoms, depression reduction, health-related quality of life.

Research strategy for identification of trials: Our research question for this review was “Whether acupuncture has any effect on PSD?” The researchers performed a comprehensive search on the existing literature from the major academic databases including Science Direct, CENTRAL, PubMed, China Academic Journals Full-text Database (CNKI), Medline and

Google Scholar. The search string includes three parts with AND in between: (systematic review OR meta-analysis) AND (acupuncture OR acupuncture therapy OR acupuncture points OR needle OR electro-acupuncture) AND (Post stroke depression OR depressive disorder) and the time criteria is from the inception until March 2018. To make sure of the inclusion of all existing literature, the reference lists of the results manually checked and the missed findings added to the list. EndNote X8 reference management software was used to sort and handle the findings.

Study selection procedure: Each individual citation checked carefully by authors by looking not only at the title and abstract but also the full text to examine inclusion and exclusion criteria. The selection criteria illustrated in details and worked as the reference for two reviewers. In case of any disagreement between the authors about the inclusion and exclusion of a single study, an external third review run by one of the professors of the Shanghai University of Traditional Chinese Medicine.

Data extraction and quality assessment: The quality assessment of every single SR is the most challenging part of the research. Considering two factors of reliability and validity, the authors chose two measurement tools to assess the quality of the reviews: Oxman-Guyatt Overview Quality Assessment Questionnaire (OQAQ) and Assessment of Multiple Systematic Reviews (AMSTAR). The two mentioned tools focused on methodological aspects. To cover the report quality, we employed the Preferred Reporting Items for Systematic Reviews

and Meta-Analyses (PRISMA). In all three assessments, after comprehensive dialogue and discussions on the measurements tools and reaching an agreement on the utilization of tools and interpretation of the criteria, each researcher analyzed each SR independently. In case of any disagreement, if the disagreement was not resolved after discussions, a third review was obtained from the third researcher. OQAQ and AMSTAR have 9 and 11 criteria respectively in which one point was awarded for each “Yes” and all other choices were received zero scores. Based on the total scores of the assessment tools, the reviews broke down in three groups: low quality (scores from 0-4), moderate quality (scores from 5-8) and high quality (scores from 9 to 11). The authors designed an electronic form to extract required data from the reviewed literature. The collected data include general information of participants (gender, age), diagnostic criteria, measured outcomes, intervention details, sample sizes of each study, design of study, OQAQ and PRISMA scale score. In case of any need for more detail and information, we referred to the original RCT to provide the accurate required information. Again, any disagreement on data was solved through the discussion and if the discussion was not successful we referred to the third reviewer as the reference.

Results

Our initial search identified 1305 studies according to the search words, which we excluded 673 due to the duplication. 322 entries failed to meet illustrated criteria and were ex-

cluded. The left 6 full-text references were fully assessed for quality eligibility. Ultimately, we were left with just 2 qualified studies fully satisfying the quality assessment (PRISMA, OQAQ, AMSTAR). (Table 1, Figure 1).

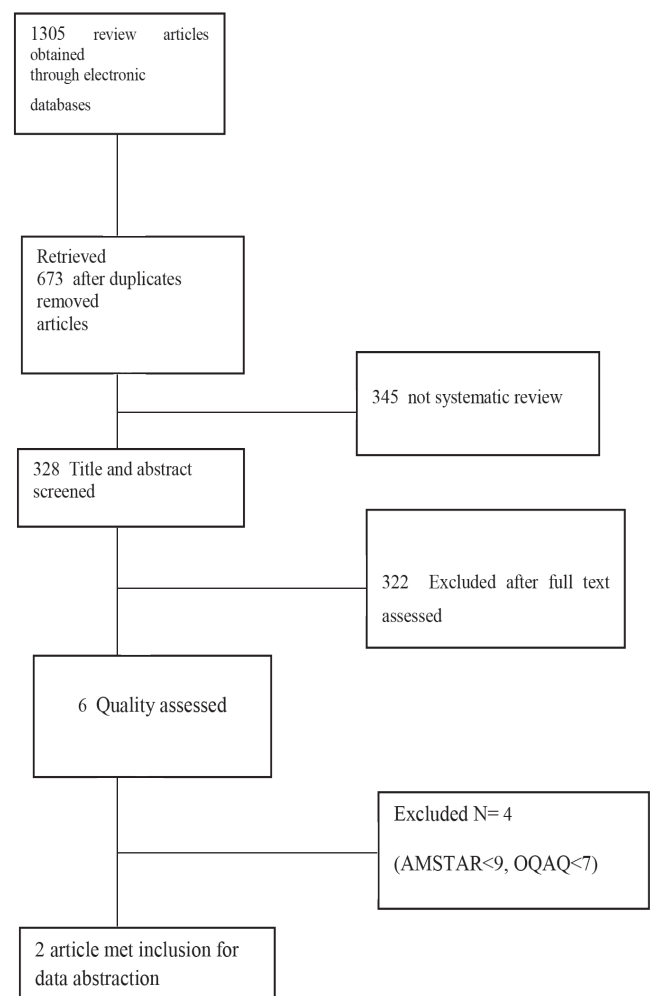


Figure 1. Flowchart: Study Selection

Table I. Review Articles included in the study

Systematic review	Scores		
	OQAQ	PRISMA	AMSTAR
[13]	9	25	10
[14]	8	24	9

Table II. Summary of key data

Review	Number of the included researches	Total sample size	conclusion
[13]	15 RCT	1680	Acupuncture is an effective way for treating PSD
[14]	13 RCT	845	Even though the result showed that acupuncture is an effective way of treating PSD but more qualified RCT needed.

Publication Bias

As the number of the trials related to the mentioned outcomes was limited, the publication bias is not impossible.

Discussion

Our analysis shows that, between 2014 and 2017, a considerable multitude of systematic reviews of acupuncture for post stroke depression has emerged, which indicates the interest in this subject has grown considerably. The reason why meta-analyses and systematic reviews widely used as handy pieces of evidence is that alongside with other sections, health care experiences innovation in a very high speed and up to date way is a big challenge for practitioners [15]. Although meta-analysis writers face very challenging situations in solving clinical controversies [16], and the Jadad et al argued in order for them to be used as pieces of evidence, they should be conduct-

ed comprehensively, maximize the precision, minimize the bias, narrate clearly so that any interested reader could understand and master the review easily [17]. According to OQAQ and AMSTAR check lists that we administered in this study both systematic reviews were high quality reviews, their conclusions on the effectiveness of acupuncture for treating post stroke depression were important but in both reviews, the missing point was the caution suggestion of acupuncture treatment which is mighty, even for professional acupuncturists. An eye-catching point is that all of the RCTs included in these two reviews and even reviews originated from China, almost all concluded on positive results about the efficacy of

acupuncture treatment for PSD. Thus, the need for more research in the different sets of experiment seems obvious. Most of the RCTs do compare the effectiveness of acupuncture and antidepressant medicine, although antidepressants are the first option coming to the practitioners' mind in treating PSD; though there are other non-pharmacological treatment options like psychotherapy [18], exercise or movement based behavioral therapy [19], which should be considered in the future studies. The main focus of methodological quality assessment is the preciseness of bias control, which is the most important issue in systematic reviews [20]. As each RCT has its own specific method, constituting one whole integrated body of evidence from all research seems very challenging at initial steps. At this step, the risk of bias is downgraded due to the weakness in reporting "allocation concealment" and "sequence generation" among other reasons [21], and that is because the included SRs were of good quality, indicated by a median AMSTAR score of 9 and a median OQAQ score of 8, and the original RCTs were of poor quality.

Conclusion

We used a new way of assessing the existing literature over treating post stroke depression by acupuncture. Despite of suggestions of two high quality reviewed studies, we cannot strongly recommend the efficacy of acupuncture in treating post stroke depression. For reaching to that warranty the need of RCTs which are well designed according to quality assessment criteria seem inevitable.

Conflict of interest

None.

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