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Review

System review on treating post-stroke depression with acupuncture*

针灸治疗中风后抑郁的系统评价*

ZHANG Wei (张 伟)[1], **SUN Jian-hua** (孙建华)[2]✉, **GAO Yang** (高 旸)[3], **PEI Li-xia** (裴丽霞)[1,2], **WU Xiao-liang** (吴晓亮)[2], **CHEN Lu** (陈 璐)[2], **JIAO Dai-yan** (焦黛研)[1]

1. *Jiangsu province hospital of TCM, Nanjing 210023, Jiangsu Province, China;* 2. *Affiliated Hospital of Nanjing University of TCM;* 3. *First Affiliated Hospital of Tianjin University of TCM*（1. 江苏省中医院，江苏南京 210023，中国；2. 南京中医药大学附属医院；3. 天津中医药大学第一附属医院）

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✉ Corresponding author: SUN Jian-hua (1964-), male, chief physician.
Research field: clinical and mechanism study of treating internal diseases with acupuncture.
E-mail: drjhsun@sina.com

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ABSTRACT

Objective To assess the efficacy and safety of treating post-stroke depression with acupuncture compared to western medicine systematically. **Methods** Databases were retrieved such as Cochrane Library, PubMed, Web of Sicence, EMbase, CBM, CNKI and WanFang Data so as to look up randomized controlled trials (RCT) of treating post-stroke depression with acupuncture and western medicine, and the time limit for the retrieval spanned from the date of database established to September 2013. By extracting data and evaluating methodological quality of included studies according to inclusion and exclusion criteria, RevMan 5.2 software was applied for Meta-analysis and evidence quality was assessed by adopting the GRADE system. **Results** A total of 13 RCTs (845 patients with post-stroke depression) were included in this study. It was revealed by Meta-analysis that the differences of the two groups were statistically significant in terms of HAMD scale scores measured at the end of the treatment by comparing the treatment of acupuncture and western medicine [SMD=0.26, 95% CI (0.11, 0.40)], but via susceptibility analysis (excluding low quality studies), the differences were not statistically significant [SMD=-0.06, 95% CI (-0.37, 0.25)], and the reliability of the results was low; in terms of adverse events, the differences were statistically significant [RR= 0.32, 95% CI (0.19, 0.53)], and the risk of adverse events reduced by 68% in the acupuncture group. From the assessment on evidence quality grade based on GRADE system, it was revealed that HAMD scores and adverse events were evidences with fairly low quality. **Conclusion** Although this system assessment showed that treating post-stroke depression with acupuncture was more effective compared with western medicine, the result was less reliable and quality of evidences was poor. The above-mentioned results need more high-quality randomized controlled trials for further verification.

KEY WORDS: post-stroke depression; acupuncture; system assessment

Post-stroke depression (PSD) is one of common complications of cerebral vascular diseases. It is reported from studies overseas that the incidence of depression within a month following the post-stroke is 18.8 %, 22%–31% in three months, 33.7% in six months and 36.2–38.7% in one year [1-3]. PSD patients lose their interest in participating in activities with depressed mood and prolonged recovery time, and they are less compliant to the treatment, which not only hinders recovery of limb function, impairs their quality of life, but also increases the burden on their family and the society and enhances the rate of mortality

and recurrence of stroke. Nowadays, medications for PSD mainly include monoamine oxidase inhibitors (MAOIs), tricyclic antidepressants (TCAs), tetracyclic antidepressants and selective serotonin reuptake inhibitors (SSRIs). However, anti-depression drugs may be adversely effective and unaffordable. In recent years, clinical studies of treating PSD with acupuncture have been on the rise, and it was found in animal studies that acupuncture can significantly improve the expression of 5-hydroxytryptamine and acetylcholinesterase in the hippocampi of the rat with depression[4], regulate hyperactive HPA axis[5] and has a certain effect on the treatment of depression. Clinically, PSD is mainly treated with antidepressant. In this research Cochrane system assessment was applied to assess the efficacy and safety of randomized controlled trials of treating post-stroke depression with acupuncture and western medicine so as to provide basis for clinical decisions.

MATERIAL AND METHODS

Inclusive criteria

Types of study: randomized controlled trials (RCT) of treating post-stroke depression with acupuncture and western medicine; methods of random sequences generation needed to be clarified in the included literature in either English or Chinese whether blinding was used or not.

Subjects: age, gender and sources were not limited. Stroke served as the first-listed diagnosis with specific diagnostic criteria, and the diagnosis of depression went in line with diagnostic criteria at home and abroad, such as the Chinese Classification and Diagnostic Criteria of Mental Disorders (CCMD), the Diagnostic and Statistical Manual of Mental Disorders (DSM), Hamilton Depression Scale (HAMD).

Intervention: the treatment group received acupuncture (needle materials, point selection, implementation techniques, time for needle retention and course were not limited); the control group received western medicine therapy (types were not limited).

Outcome indices: ① HAMD scale scores; ② adverse events.

Exclusive criteria

① Only "randomized controlled", "randomization" and "random" were mentioned in the text, without any specific content; ② in the basic treatment, both the treatment group and the control group were treated with acupuncture, or the treatment group took antidepressants as well; ③ comparison of controlled study of acupoint injection and drug therapy; ④ repeated publication with more rigorous methodology report would be selected; ⑤ uncertain outcomes indices.

Retrieval strategy

Databases were retrieved such as Cochrane Library, PubMed, Web of Sicence, EMbase, CBM, CNKI and WanFang Data, and the time limit for the retrieval spanned from the date of database established to September 2013. Based on different databases, subject terms and free words were combined in Pubmed (Mesh), EMbase (EMTREE), CBM (MeSH) and were adjusted according to databases. In addition, references included in the literature and related reviews were searched for. Take PubMed for example, the search strategy went as follows: post stroke OR post cerebral infarction OR post cerebral vascular accident OR post cerebral ischaemia OR post cerebral haemorrhage AND depression OR depressive disorder AND acupuncture OR acup* OR electroacupuncture OR auricular acupuncture OR scalp acupuncture.

Two researchers read the title and abstract on their own. After excluding trials non-conformity with inclusive criteria, they read the full text of the literature likely to meet the inclusive criteria. Any dispute arising was resolved by discussion. Items for data extraction included title, author, source, study design, random allocation method, allocation concealment, object of study, inclusive criteria, exclusive criteria, intervention for the treatment group, intervention for the control group, course of treatment, efficacy indices, adverse events and so on. After the extraction, two researchers crosschecked.

Evaluation of literature quality and level of evidence

Cochrane tools for bias risks assessment[6] and PEDro scale[7] were adopted in literature quality assessment. Cochrane tools for bias risks assessment include "low bias", "high bias" and "unclear" for six items such as generation of random sequence, allocation concealment, blinding implementation, completeness of outcome data and so on; PEDro scale was developed by the physiotherapy evidence database, which could be used to quantitatively evaluate the quality of the literature of physical therapy in clinical trials[8] with the total score of 10 points, and "high quality" for scores $\geqslant$6 and "low quality" for scores <6[9].