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1. Acupuncture for the prevention of tension-type headache

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Abstract

Background

Acupuncture is often used for prevention of tension-type headache but its effectiveness is still controversial. This is an update of our Cochrane review originally published in Issue 1, 2009 of The Cochrane Library.

Objectives

To investigate whether acupuncture is a) more effective than no prophylactic treatment/routine care only; b) more effective than 'sham' (placebo) acupuncture; and c) as effective as other interventions in reducing headache frequency in adults with episodic or chronic tension-type headache.

Search methods

We searched CENTRAL, MEDLINE, EMBASE and AMED to 19 January 2016. We searched the World Health Organization (WHO) International Clinical Trials Registry Platform to 10 February 2016 for ongoing and unpublished trials.

Selection criteria

We included randomised trials with a post-randomisation observation period of at least eight weeks, which compared the clinical effects of an acupuncture intervention with a control (treatment of acute headaches only or routine care), a sham acupuncture intervention or another prophylactic intervention in adults with episodic or chronic tension-type headache.

Data collection and analysis

Two review authors checked eligibility; extracted information on participants, interventions, methods and results; and assessed study risk of bias and the quality of the acupuncture intervention. The main efficacy outcome measure was response (at least 50% reduction of headache frequency) after completion of treatment (three to

four months after randomisation). To assess safety/acceptability we extracted the number of participants dropping out due to adverse effects and the number of participants reporting adverse effects. We assessed the quality of the evidence using GRADE (Grading of Recommendations Assessment, Development and Evaluation).

Main results

Twelve trials (11 included in the previous version and one newly identified) with 2349 participants (median 56, range 10 to 1265) met the inclusion criteria.

Acupuncture was compared with routine care or treatment of acute headaches only in two large trials (1265 and 207 participants), but they had quite different baseline headache frequency and management in the control groups. Neither trial was blinded but trial quality was otherwise high (low risk of bias). While effect size estimates of the two trials differed considerably, the proportion of participants experiencing at least 50% reduction of headache frequency was much higher in groups receiving acupuncture than in control groups (moderate quality evidence; trial 1: 302/629 (48%) versus 121/636 (19%); risk ratio (RR) 2.5; 95% confidence interval (CI) 2.1 to 3.0; trial 2: 60/132 (45%) versus 3/75 (4%); RR 11; 95% CI 3.7 to 35). Long-term effects (beyond four months) were not investigated.

Acupuncture was compared with sham acupuncture in seven trials of moderate to high quality (low risk of bias); five large studies provided data for one or more meta-analyses. Among participants receiving acupuncture, 205 of 391 (51%) had at least 50% reduction of headache frequency compared to 133 of 312 (43%) in the sham group after treatment (RR 1.3; 95% CI 1.09 to 1.5; four trials; moderate quality evidence). Results six months after randomisation were similar. Withdrawals were low: 1 of 420 participants receiving acupuncture dropped out due to adverse effects and 0 of 343 receiving sham (six trials; low quality evidence). Three trials reported the number of participants reporting adverse effects: 29 of 174 (17%) with acupuncture versus 12 of 103 with sham (12%; odds ratio (OR) 1.3; 95% CI 0.60 to 2.7; low quality evidence).

Acupuncture was compared with physiotherapy, massage or exercise in four trials of low to moderate quality (high risk of bias); study findings were inadequately reported. No trial found a significant superiority of acupuncture and for some outcomes the

results slightly favoured the comparison therapy. None of these trials reported the number of participants dropping out due to adverse effects or the number of participants reporting adverse effects.

Overall, the quality of the evidence assessed using GRADE was moderate or low, downgraded mainly due to a lack of blinding and variable effect sizes.

Authors' conclusions

The available results suggest that acupuncture is effective for treating frequent episodic or chronic tension-type headaches, but further trials - particularly comparing acupuncture with other treatment options - are needed.

2. The Effects of Acupuncture on Glutamatergic Neurotransmission in Depression, Anxiety, Schizophrenia, and Alzheimer's Disease: A Review of the Literature

Cheng-Hao Tu,¹ Iona MacDonald,¹ and Yi-Hung Chen^{1,2,3,*} *Psychiatry*. 2019; 10: 14. Published online 2019 Feb 12. doi: 10.3389/fpsyt.2019.00014

Keywords: acupuncture, glutamate, neuropsychiatric disorders, Alzheimer's disease, depression, anxiety, schizophrenia

Abstract

Neuropsychiatric disorders, including depression, anxiety, schizophrenia, and Alzheimer's disease (AD), are diseases that are directly or indirectly associated with cerebral dysfunction and contribute significantly to disability in adult populations worldwide. Important limitations surround the currently available pharmacologic agents for neuropsychiatric disorders and, moreover, many patients fail to respond to these therapies. Acupuncture might be a complementary therapy for neuropsychiatry disorders. In this review, we investigate the current evidence for the treatment efficacy of acupuncture in depression, anxiety, schizophrenia, and AD. Secondly, we review recent advances in understanding of the dysregulated glutamate system underlying the pathophysiology of these disorders. Finally, we discuss the ways in which acupuncture treatment can potentially modulate glutamate receptors and excitatory amino acid transporters. We conclude that the treatment effects of

acupuncture may be underpinned by its intervention in the dysregulated glutamate system. Further preclinical and clinical studies are needed to clarify the possible mechanisms of acupuncture in these neuropsychiatric disorders and to establish protocols for treatment guidelines.

Psychiatry.2019;10:14. Published online 2019 Feb 12.doi: 10.3389/fpsy.2019.00014

3. Effects of acupuncture on nutritional state of patients with stable chronic obstructive pulmonary disease (COPD): re-analysis of COPD acupuncture trial, a randomized controlled trial

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Keywords: COPD, Acupuncture, Nutritional state, Proinflammatory cytokine

Abstract

Background

There are an increasing number of evidences that chronic obstructive pulmonary disease (COPD) is a systemic illness and that bodyweight loss is its prominent manifestation. We focused on the nutritional outcomes to find out the effectiveness of acupuncture on nutritional state of COPD patients and on their prognosis in our previous interventional study.

Methods

The present study is re-analysis of our previous interventional study, COPD Acupuncture Trial (CAT) published in 2012. Data from CAT was re-analyzed in terms of nutritional status, inflammatory biomarkers, and prognostic index. Nutritional states were evaluated by the measurements of body weight, body composition, and muscle strength, and the nutritional hematological examination results (retinol-binding protein (RBP), prealbumin (PA), transferrin (Tf), and hemoglobin (Hb) in serum), and inflammation biomarkers such as carboxyhemoglobin (COHb), High

sensitivity C-reactive protein (Hs-CRP), Tumor Necrosis Factor-alpha (TNF- α), Interleukin 6 (IL-6), and Serum Amyloid A (SAA) were measured. The BODE index was measured in terms of prognosis. These measurements were compared between the real acupuncture group (RAG) and the placebo acupuncture group (PAG). All data are presented as mean (SD) or mean (95% CI). The difference between baseline and final volumes was compared using analysis of covariance (ANCOVA). Moreover, correlations between nutritional hematological examination scores and inflammation biomarker parameters were assessed using Spearman's rank correlation coefficient.

Results

After 12 weeks, the change in body weight was significantly greater in the RAG compared with the PAG (mean [SD] difference from baseline: 2.5 [0.4] in RAG vs -0.5 [1.4] in PAG; mean difference between the groups: 3.00, 95% CI, 2.00 to 4.00 with ANCOVA). Patients in RAG also had improvements in the results of nutritional hematological examination (RBP, PA, Tf, Hb), Inflammation biomarkers (TNF- α , IL-6, SAA, Hs-CRP, COHb) and the BODE index.

Conclusion

This study demonstrated some clear evidences that acupuncture can be a useful adjunctive therapy to improve nutritional state of COPD patients.

Trial registration

UMIN Clinical Trials Registry (UMIN000001277). Retrospectively registered.

BMC Complement Altern Med. 2018; 18: 287. Published online 2018 Oct 24. doi: 10.1186/s12906-018-2341-3

4. Therapeutic effects of different durations of acupuncture on rats with middle cerebral artery occlusion

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Keywords: nerve regeneration, middle cerebral artery occlusion, manipulation, Neiguan, cerebral infarction volume, twisting-rotating method, duration, frequency, cerebral blood flow, neural regeneration

Abstract

Acupuncture is regarded as an effective therapy for cerebral ischemia. Different acupuncture manipulations and durations may result in different therapeutic effects. In the present study, the Neiguan (PC6) acupoint of rats with occluded middle cerebral arteries was needled at a fixed frequency (3 Hz) with different durations, i.e., 5, 60 and 180 seconds under a twisting-rotating acupuncture method. Results showed that different durations of acupuncture had different therapeutic effects, with 60 seconds yielding a better therapeutic effect than the other two groups. This duration of treatment demonstrated rapid cerebral blood flow, encouraging recovery of neurological function, and small cerebral infarct volume. Experimental findings indicated that under 3 Hz frequency, the treatment of needling Neiguan for 60 seconds is effective for ischemic stroke.

Neural Regen Res. 2015 Jan; 10(1): 159–164. doi: 10.4103/1673-5374.150727

5. A study of the effects of 8-week acupuncture treatment on patients with Parkinson's disease

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Keywords: acupuncture, functional magnetic resonance imaging, neurodegeneration, Parkinson's disease, treatment effects

Abstract

Background:

Parkinson's disease (PD) is a degenerative brain disorder, resulting in decreased neural responses in the supplementary motor area, putamen, and thalamus. Previous research showed that acupuncture was able to improve the motor dysfunction. The primary aim of this study is to assess the efficacy of longer acupuncture treatment for preventing brain degeneration in patients with PD.

Methods:

Ten outpatients with PD were recruited from Kyung Hee Medical Hospital. Behavioral and neural responses were examined before and after 8 weeks of acupuncture treatment. A semi-individualized treatment approach was used; patients were treated for 15 minutes with 120-Hz electro-acupuncture at the right GB34 and Taechung (LR3), followed by manual acupuncture based on the individual symptoms of the patient.

Results:

Immediately after 8 weeks of acupuncture treatment, the Unified Parkinson's Disease Rating Scale (UPDRS) sub-scores and the depression scores for the patients had statistically decreased compared to the scores before acupuncture treatment; moreover, 8 weeks later, these scores remained stable. Compared to the neural responses before the acupuncture stimulation, those after the acupuncture treatment were significantly higher in the thalamus, cingulate gyrus, anterior cingulate, lingual gyrus, parahippocampal gyrus, lateral globus pallidus, mammillary body, middle temporal gyrus, cuneus, and fusiform gyrus. Finally, a positive correlation was found between the UPDRS and the mean magnetic resonance signal change for the thalamus.

Conclusion:

This study found beneficial clinical effects of 8-week acupuncture treatment in the brains of patients with PD.

Medicine (Baltimore). 2018 Dec; 97(50): e13434. Published online 2018 Dec 14. doi: 10.1097/MD.00000000000013434

6. Acupuncture decreased the risk of coronary heart disease in patients with fibromyalgia in Taiwan: a nationwide matched cohort study

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Keywords: Acupuncture, Coronary heart disease, Fibromyalgia, National Health Insurance Research Database, Taiwan

Abstract

Background

The aim of this study was to understand whether acupuncture can decrease the risk of coronary heart disease (CHD) in patients with fibromyalgia.

Methods

Using data from the Taiwanese National Health Insurance Research Database, we performed a propensity score-matched cohort study to analyze patients with fibromyalgia diagnosed between 1 January 2000 and 31 December 2010. Patients who received acupuncture treatment, beginning with their initial date of fibromyalgia diagnosis and extending to 31 December 2010, were regarded as the acupuncture cohort. The no-acupuncture cohort comprised patients who never received acupuncture through 31 December 2010. A Cox regression model was used to adjust for age, sex, comorbidities, and drugs used. The HRs of the acupuncture and no-acupuncture cohorts were compared.

Results

After performing a 1:1 propensity score match, 58,899 patients in both cohorts were identified. Baseline characteristics were similar in both cohorts. The cumulative incidence of CHD was significantly lower in the acupuncture cohort (log-rank test, $p < 0.001$). In the follow-up period, 4389 patients in the acupuncture cohort (17.44 per 1000 person-years) and 8133 patients in the no-acupuncture cohort (38.36 per 1000 person-years) developed CHD (adjusted HR 0.43, 95% CI 0.41–0.45). The

beneficial effect of acupuncture on the incidence of CHD was independent of age, sex, comorbidities, and statins used.

Conclusions

Our study confirmed that acupuncture reduced the risk of CHD in patients with fibromyalgia in Taiwan. Further clinical and mechanistic studies are warranted.

Arthritis Res Ther. 2017;19: 37. Published online 2017 Feb 28. doi: 10.1186/s13075-017-1239-7

7. Mechanisms of Acupuncture Therapy for Simple Obesity: An Evidence-Based Review of Clinical and Animal Studies on Simple Obesity

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Abstract

Simple obesity is a worldwide epidemic associated with rapidly growing morbidity and mortality which imposes an enormous burden on individual and public health. As a part of Traditional Chinese Medicine (TCM), acupuncture has shown the positive efficacy in the management of simple obesity. In this article, we comprehensively review the clinical and animal studies that demonstrated the potential mechanisms of acupuncture treatment for simple obesity. Clinical studies suggested that acupuncture regulates endocrine system, promotes digestion, attenuates oxidative stress, and modulates relevant molecules of metabolism in patients of simple obesity. Evidence from laboratory indicated that acupuncture regulates lipid metabolism, modulates inflammatory responses, and promotes white adipose tissue browning. Acupuncture also suppresses appetite through regulating appetite regulatory hormones and the downstream signaling pathway. The evidence from clinical and animal studies indicates that acupuncture induces multifaceted regulation through complex mechanisms and moreover a single factor may not be enough to explain the beneficial effects against simple obesity.

Evid Based Complement Alternat Med. 2019; 2019: 5796381. Published online 2019 Feb 3. doi: 10.1155/2019/5796381

8. The cerebral mechanism of acupuncture for treating knee osteoarthritis: study protocol for a randomized controlled trial

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Keywords: Acupuncture, Knee pain, Central mechanism, Functional magnetic resonance imaging

Abstract

Background

Acupuncture is safe and effective for reducing the symptoms of knee osteoarthritis (KOA), but the underlying mechanisms of acupuncture for treating KOA are not fully understood.

Methods/design

In total, 108 participants diagnosed with KOA will be recruited. They will be blinded to group assignment and randomized to either verum acupuncture, sham acupuncture or waiting-list groups with 36 patients in each group. Each patient in the acupuncture group will receive five treatments per week for 2 weeks. This study will focus on detecting the cerebral functional connectivity changes elicited by acupuncture treatment. The Visual Analog Scale and the short form of the McGill Pain Questionnaire, the Western Ontario and McMaster Universities Osteoarthritis Index, the Attention Test Scale, the Pain Assessment of Sphygmomanometer and the 12-Item Short Form Health Survey will be used to evaluate the symptoms and quality of life improvement at the baseline and the end of treatment. The Self-rating Anxiety Scale and the Self-rating Depression Scale will be used at the baseline and the end of treatment to investigate the influence of emotional state on brain activity and clinical variable. To ensure the consistency of acupuncture manipulation, the deqi scale will be performed after each acupuncture treatment. During the procedure of outcome evaluation and data analysis, the evaluators and statisticians will be

blinded to the group allocation. The repeated measures analysis of variance (3 groups × 2 time points ANOVA) will be employed to analyze numerical variables of the clinical and neuroimaging data generated in the study, then the t test will be used in the post-hoc analysis.

Discussion

The results of this randomized, sham- and waiting-list-controlled functional magnetic resonance imaging (fMRI) study will help to investigate the influence of verum acupuncture treatment on the brain activities of patients with KOA, which might provide evidence for the clinical application of verum acupuncture for KOA management.

Trial registration. Chinese Clinical Trial Registry, ID:ChiCT-IOR-17012364. Registered on 14 August 2017.

Trials. 2019; 20: 126. Published online 2019 Feb 13. doi: 10.1186/s13063-019-3233-7

9. Different Brain Activation after Acupuncture at Combined Acupoints and Single Acupoint in Hypertension Patients: An Rs-fMRI Study Based on ReHo Analysis

Jiping Zhang, 1 Xiaowen Cai, 1 Yanjie Wang, 2 Yu Zheng, 3 Shanshan Qu, 1 Zhinan Zhang, 1 Zengyu Yao, 1 Guanghong Chen, 1 Chunzhi Tang, 4 and Yong Huang 1

Abstract

Acupuncture is proved to be effective on hypertension by numerous studies and resting-state functional magnetic resonance imaging (Rs-fMRI) is a widely used technique to study its mechanism. Along with lower blood pressure, patients with hypertension receiving acupuncture also presented improvement in function of cognition, emotion, language, semantic sensation, and so on. This study was a primary study to explore the acting path of acupuncture at combined acupoints in stimulated brain areas related to such functions.

Methods

In this research, regional homogeneity (ReHo) was applied to analyze the Rs-fMRI image data of brain activities after acupuncture at LR3, KI3, and LR3+KI3 and to compare the differences of functional brain activities between stimulating combined acupoints and single acupoint under pathological conditions. A total of thirty hypertension patients underwent Rs-fMRI scanning before acupuncture treatment and then were randomly divided into three groups following random number table, the LR3 group (3 males and 7 females), the KI3 group (3 males and 7 females), and the LR3+ KI3 group (4 males and 6 females) for needling, respectively. When the 30-min treatment finished, they received a further Rs-fMRI scanning. The Rs-fMRI data before and after the acupuncture treatment were analyzed through ReHo.

Results

Compared with preacupuncture, respectively, ReHo values increased in Brodmann areas (BAs) 3, 18, and 40 and decreased in BAs 7 and 31 in LR3+ KI3 group. However, ReHo values only decreased in BA7 of KI3 group while the results showed no significant difference of brain regions in LR3 group between pre- and postacupuncture. Compared with LR3 group, LR3+KI3 group exhibited decreased ReHo values in BAs 7, 9, and 31. Meanwhile, compared with KI3 group, LR3+KI3 group exhibited increased ReHo values in the BAs 2, 18, 30, and 40 and decreased ReHo values in BA13.

Conclusion

Combined acupoints of LR3 and KI3 could act on wider brain areas than the sum of single acupoints, whose functions include emotional processing, cognition, somatic sensation, spatial orientation, language production, and vision.

Evid Based Complement Alternat Med. 2019; 2019: 5262896. Published online 2019 Jan 3. doi: 10.1155/2019/5262896

Happy 1st May day! 快乐 5.1! 快乐猪年!

