

英国中医药学会  
**The Association of Traditional Chinese Medicine and  
Acupuncture UK**

# TCM Research Updates

Issue No 12  
1<sup>st</sup> October 2014



## Contents

1. Randomized controlled trial: Moxibustion and acupuncture for the treatment of Crohn's disease.
2. Role of moxibustion in inflammatory responses during treatment of rat ulcerative colitis.
3. De qi, a threshold of the stimulus intensity, elicits the specific response of acupoints and intrinsic change of human brain to *acupuncture*.
4. Acupuncture on GB34 activates the precentral gyrus and prefrontal cortex in Parkinson's disease.
5. Using a partially randomized patient preference study design to evaluate the therapeutic effect of acupuncture and cupping therapy for fibromyalgia: study protocol for a partially randomized controlled trial.
6. Effectiveness of strengthened stimulation during acupuncture for the treatment of allergic rhinitis: study protocol for a randomized controlled trial.
7. Laser Acupuncture at HT7 Acupoint Improves Cognitive Deficit, Neuronal Loss, Oxidative Stress, and Functions of Cholinergic and Dopaminergic Systems in Animal Model of Parkinson's Disease.
8. NK cells mediate the cumulative analgesic effect of electroacupuncture in a rat model of neuropathic pain.
9. Effect of zusanli (ST 36) moxibustion on rat mesenteric microvascular system.

# Randomized controlled trial: Moxibustion and acupuncture for the treatment of Crohn's disease.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4138481/>

World J Gastroenterol. 2014 Aug 21;20 (31):11000-11.

By Bao CH

## **AIM:**

To evaluate the clinical efficacy and safety of acupuncture and moxibustion for the treatment of active Crohn's disease (CD).

## **METHODS:**

Ninety-two patients were equally and randomly divided into the treatment group and received herb-partitioned moxibustion combined with acupuncture, and the control group received wheat bran-partitioned moxibustion combined with superficial acupuncture. The patients received three treatment sessions per week for 12 wk and were followed up for 24 wk. The main outcome was evaluated using the CD Activity Index (CDAI) score, and the secondary outcomes were evaluated using laboratory indicators such as hemoglobin (HGB), C-reactive protein (CRP), erythrocyte sedimentation rate, quality-of-life, endoscopic ratings, and intestinal histology scores.

## **RESULTS:**

The CDAI scores of both the treatment and control groups were significantly reduced after treatment compared with those measured before

treatment. However, the degree of improvement in the treatment group was significantly greater than that of the control group. The improvement in symptoms in patients of the treatment group was sustained at follow-up, whereas that of the control group was not. The overall efficacy of the treatment was significantly greater than that of the control. Both groups demonstrated significant improvements in quality-of-life ratings after treatment, but the improvement was significantly greater in the treatment group than in the control group. In addition, the patients in the treatment group showed significantly increased HGB and significantly decreased CRP levels and histopathological scores at the end of treatment, whereas the control group did not exhibit significant changes.

## **CONCLUSION:**

Moxibustion with acupuncture provided significant therapeutic benefits in patients with active CD beyond the placebo effect and is therefore an effective and safe treatment for active CD.



# Role of moxibustion in inflammatory responses during treatment of rat ulcerative colitis.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4145768/>

World J Gastroenterol. 2014 Aug 28;20(32):11297-304. doi: 10.3748/wjg.v20.i32.11297.

BY Han Y

## Abstract

### **AIM:**

To investigate the efficacy of moxibustion in ulcerative colitis (UC) rats from morphological, immunological and molecular biological perspectives.

### **METHODS:**

Thirty-two Sprague-Dawley rats were randomly assigned to a blank control group (normal rats,  $n = 6$ ) and a model replication (MR) group (UC rats,  $n = 26$ ). A UC model was established by 2,4,6-trinitrobenzenesulfonic acid/dextran sulfate sodium enema. Rats in the MR group were further randomly assigned to a 9-min moxibustion(9M) group (9 moxa-cone,  $n = 6$ ), 6-min moxibustion (6M) group (6 moxa-cone,  $n = 6$ ), 3-min moxibustion (3M) group (3 moxa-cone,  $n = 6$ ), and a waiting list control (WLC) group (no moxibustion treatment,  $n = 6$ ). Rats in the moxibustion treatment group were treated in 14 sessions over 28 d. Disease activity, local tissue morphology, serum level of interleukin (IL)-8 and IL-10, and expression of Toll-like receptor (TLR)9 as well as nuclear factor (NF)- $\kappa$ B p65 in colonic tissue were determined by disease activity index (DAI), hematoxylin and eosin staining, electron microscopy, enzyme-linked immunosorbent assay and Western blotting, respectively.

### **RESULTS:**

DAI was lowest in the 9M group and highest in the WLC group. The differences in DAI between the moxibustion treatment (3M, 6M, 9M) and no treatment groups were significant for all one-to-

one comparisons ( $0.60 \pm 0.54$  vs  $1.20 \pm 0.44$ ,  $0.60 \pm 0.54$  vs  $1.80 \pm 0.45$ ,  $0.60 \pm 0.54$  vs  $3.0 \pm 0.45$ , respectively,  $P < 0.05$ ). Light and electron microscopy showed that the neatness of the glandular arrangement in colonic mucosal epithelia gradually increased in the WLC, 3M, 6M to 9M groups. IL-8 level successively decreased while IL-10 level increased from the WLC to 3M, 6M and 9M groups. The differences among these groups were significant for all comparisons ( $105.46 \pm 8.75$  vs  $76.61 \pm 3.58$ ,  $105.46 \pm 8.75$  vs  $69.78 \pm 1.87$ ,  $105.46 \pm 8.75$  vs  $67.41 \pm 1.84$ , respectively,  $P < 0.01$  for IL-8; and  $30.83 \pm 1.29$  vs  $75.64 \pm 1.90$ ,  $30.83 \pm 1.29$  vs  $80.90 \pm 3.16$ ,  $30.83 \pm 1.29$  vs  $83.46 \pm 2.37$ , respectively,  $P < 0.01$  for IL-10), except comparison of 6M vs 9M. Expression of TLR9 and NF- $\kappa$ B p65 decreased in order: highest in the WLC group and lowest in the 9M group. In addition, the differences among the WLC, 3M, 6M and 9M groups were significant for all comparisons ( $0.492 \pm 0.026$  vs  $0.380 \pm 0.022$ ,  $0.492 \pm 0.026$  vs  $0.355 \pm 0.005$ ,  $0.492 \pm 0.026$  vs  $0.327 \pm 0.015$ , respectively,  $P < 0.05$  for TLR9; and  $0.436 \pm 0.041$  vs  $0.326 \pm 0.022$ ,  $0.436 \pm 0.041$  vs  $0.265 \pm 0.017$ , respectively,  $P < 0.05$  for NF- $\kappa$ B p65).

### **CONCLUSION:**

Moxibustion repairs damaged colonic mucosa, suppresses serum IL-8, activates serum IL-10 level, and decreases expression of TLR-9 and NF- $\kappa$ B p65 in UC rats.

## De qi, a threshold of the stimulus intensity, elicits the specific response of acupoints and intrinsic change of human brain to *acupuncture*.

<http://www.hindawi.com/journals/ecam/2014/914878/>

Evid Based Complement Alternat Med. 2014;. Epub 2014 Jul 6. Page 11.

By Tian DS.

### Abstract

**Objectives.** De qi is the subjective constellation of sensations perceived by the acupuncturists and patients as described in several literatures, but the absence of quantitative evaluation methods in de qi restricts the use of acupuncture treatment widely in the world. In the present study, we tried to investigate the intrinsic property of de qi is and how evaluate it quantitatively. **Methods.** 30 healthy adult volunteers were determined to investigate intrinsic changes in the human body after acupuncture with de qi. **Results.** Acupuncture treatment with de qi

apparently increased acupoint blood flow, tissue displacement, and the amplitude of myoelectricity after de qi on acupoints. Furthermore, acupuncture treatment induced fMRI signal increase/decrease in different brain regions although no significant change in electroencephalography. **Interpretation.** The intrinsic change of the subjects representing the specific response of acupoints and human brain to acupuncture indicated that de qi might be evaluated quantitatively by those above aspects, which facilitated the confirmation in validity and propagation of this treatment modality widely in the world.

## Acupuncture on GB34 activates the precentral gyrus and prefrontal cortex in Parkinson's disease.

<http://www.biomedcentral.com/1472-6882/14/336/abstract>

BMC Complement Altern Med. 2014 Sep 15;14(1):336.

By Sujung Yeo

### BACKGROUND:

Acupuncture is increasingly used as an additional treatment for patients with Parkinson's disease (PD).

### METHODS:

In this functional magnetic resonance imaging study, brain activation in response to acupuncture in a group of 12 patients with PD was compared with a group of 12 healthy participants. Acupuncture was conducted on a specific acupoint, the right GB 34 (Yanglingquan), which is a frequently used

acupoint for motor function treatment in the oriental medical field.

### RESULTS:

Acupuncture stimulation on this acupoint activates the prefrontal cortex, precentral gyrus, and putamen in patients with PD; areas that are known to be impaired in patients with PD. Compared with healthy participants, patients with PD showed significantly higher brain activity in the prefrontal cortex and precentral gyrus, especially visible in the left hemisphere.

**CONCLUSIONS:**

The neuroimaging results of our study suggest that in future acupuncture research; the prefrontal cortex as well as the precentral gyrus should be treated for symptoms of Parkinson's disease and that GB 34 seems to be a suitable acupoint.

Moreover, acupuncture evoked different brain activations in patients with Parkinson's disease than in healthy participants in our study, stressing the importance of conducting acupuncture studies on both healthy participants as well as patients within the same study, in order to detect acupuncture efficacy.

## Using a partially randomized patient preference study design to evaluate the therapeutic effect of acupuncture and cupping therapy for fibromyalgia: study protocol for a partially randomized controlled trial.

<http://www.trialsjournal.com/content/15/1/280>

Trials. 2014 Jul 10;15:280. doi: 10.1186/1745-6215-15-280.

By Cao HJ

**Abstract****BACKGROUND:**

Conducting randomized controlled trials on traditional Chinese non-drug therapies has been limited by factors such as patient preference to specific treatment modality. The aim of this study is to investigate the feasibility of applying a partially randomized patient preference (PRPP) trial model in evaluating the efficacy of two types of traditional Chinese medicine therapies, acupuncture and cupping, for fibromyalgia while accounting for patients' preference of either therapeutic modality.

**METHODS:**

This protocol was approved by the Institutional Ethics Committee of affiliated Dongfang Hospital, Beijing University of Chinese Medicine (approval number: 2013052104-2). One hundred

participants with fibromyalgia will be included in this study. Diagnosis of fibromyalgia will be based on the American College of Rheumatology criteria. Before treatment, participants will be interviewed for their preference toward acupuncture or cupping therapy. Fifty participants with no preference will be randomly assigned to one of the two groups and another 50 participants with strong preference to either acupuncture or cupping will receive what they choose. For acupuncture and cupping therapy, the main acupoints used will be tender points (Ashi). Treatment will be three times a week for 5 consecutive weeks with a follow-up period of 12 weeks. Outcome measures will be qualitative (patient expectation and satisfaction) and quantitative (pain intensity, quality of life, depression assessment).

## Acupuncture for neurogenic bladder due to spinal cord injury: a systematic review protocol.

<http://bmjopen.bmj.com/content/4/9/e006249.long>  
BMJ

Open 2014;4:e006249 doi:10.1136/bmjopen-2014-006249.

By Tao Zhang

### Abstract

#### INTRODUCTION:

Neurogenic bladder is one of the most common complications following spinal cord injury (SCI). In China, acupuncture therapy is a common treatment for neurogenic bladder due to SCI, but its effects and safety remain uncertain. A protocol is described for a systematic review to investigate the beneficial effects and safety of acupuncture for neurogenic bladder due to SCI.

#### METHODS AND ANALYSIS:

Eight databases will be searched from their inception: the Cochrane Central Register of

Controlled Trials (CENTRAL), PubMed, Embase, the China National Knowledge Infrastructure (CNKI), the VIP database, the Wanfang database, the China Doctoral Dissertations Full-text Database (CDFD) and the China Master's Theses Full-text Database (CMFD). Any clinical randomised controlled trials (RCTs) and the first period of randomised cross-over studies related to acupuncture for neurogenic bladder due to SCI will be included. Outcomes will include change in urinary symptoms, urodynamic tests, clinical assessment and quality of life (QoL). The incidence of adverse events will be assessed as the safety outcome. Study selection, data extraction and quality assessment will be performed independently by two reviewers. Assessment of risk of bias, data synthesis and subgroup analysis will be carried out using Review Manager software.

#### ETHICS AND DISSEMINATION:

Ethics approval is not required as this is a protocol for a systematic review. The findings of this systematic review will be disseminated via peer-reviewed publications and conference presentations.

## Effectiveness of strengthened stimulation during acupuncture for the treatment of allergic rhinitis: study protocol for a randomized controlled trial.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4133069/>

Trials. 2014 Jul 24;15:301. doi: 10.1186/1745-6215-15-301.

By Qing Chen

### Abstract

#### BACKGROUND:

The traditional Chinese theory of acupuncture emphasizes that the intensity of acupuncture must reach a threshold to generate de qi (a specific and compound sensation during the acupuncture), which is necessary to achieve the best therapeutic effect. However, the notion

that de qi must be achieved for maximum benefit has not been confirmed by modern scientific evidence. This study aims to compare the efficacy of acupuncture with either strong (intended to elicit de qi) or weak stimulation among patients with allergic rhinitis.

#### METHODS/DESIGN:

This study compares real versus sham acupuncture in 140 patients with a history

of persistent allergic rhinitis (PER) or intermittent allergic rhinitis (IAR) and with a positive skin prick test (SPT). The trial will be conducted in the Teaching Hospital of Chengdu University of Traditional Chinese Medicine (China). In the study, patients will be randomly assigned into two groups by computer-generated randomization and assessed prior to treatment. They will then receive 12 sessions of treatments for 4 consecutive weeks and have a follow-up phase lasting 12 weeks. The main outcome measures include the primary and secondary indicators. Primary indicators are subjective symptoms scores as evaluated by visual analogue scales (VAS), rhinoconjunctivitis quality of life questionnaires (RQLQ), and the Modified Massachusetts General Hospital acupuncture sensation scale, Chinese

version (C-MMASS). The secondary indicators are the results of laboratory examinations, such as serum allergen-specific immunoglobulin E (sIgE) nasal inflammatory cells counts (mast cells, eosinophils, and T cells), and nitric oxide concentration in nasal excretion. The use of anti-allergic medication will also be recorded as one of the secondary indicators. Furthermore, adverse events will be recorded and analyzed. Intention-to-treat analysis (ITT) and per-protocol (PP) analysis will be performed to test and verify the results in this trial.

#### **DISCUSSION:**

The results of this trial will demonstrate the efficacy of using acupuncture to treat allergic rhinitis and verify whether the effectiveness of acupuncture is related to the needle sensation de qi.

## Laser Acupuncture at HT7 Acupoint Improves Cognitive Deficit, Neuronal Loss, Oxidative Stress, and Functions of Cholinergic and Dopaminergic Systems in Animal Model of Parkinson's Disease.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4138813/>

Evid Based Complement Alternat Med. 2014;2014:937601. doi: 10.1155/2014/937601. Epub 2014 Aug 5. By Wattanathorn J

### **Abstract**

To date, the therapeutic strategy against cognitive impairment in Parkinson's disease (PD) is still not in satisfaction level and requires novel effective intervention. Based the oxidative stress reduction and cognitive enhancement induced by laser acupuncture at HT7, the beneficial effect of laser acupuncture at HT7 against cognitive impairment in PD has been focused. In this study, we aimed to determine the effect of laser acupuncture at HT7 on memory impairment, oxidative stress status, and the functions of both cholinergic and dopaminergic systems in hippocampus of animal model of PD. Male Wistar rats, weighing 180-220 g, were induced

unilateral lesion at right substantianigra by 6-OHDA and were treated with laser acupuncture continuously at a period of 14 days. The results showed that laser acupuncture at HT7 enhanced memory and neuron density in CA3 and dentate gyrus. The decreased AChE, MAO-B, and MDA together with increased GSH-Px in hippocampus of a 6-OHDA lesion rats were also observed. In conclusion, laser acupuncture at HT7 can improve neuron degeneration and memory impairment in animal model of PD partly via the decreased oxidative stress and the improved cholinergic and dopaminergic functions. More researches concerning effect of treatment duration are still required.

# NK cells mediate the cumulative analgesic effect of electroacupuncture in a rat model of neuropathic pain.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4152576/>

BMC Complement Altern Med. 2014 Aug 26;14:316. doi: 10.1186/1472-6882-14-316.

BY Gao YH

## Abstract

### **BACKGROUND:**

Cumulating evidence has revealed the effectiveness of acupuncture therapy in relieving pain via immunoregulation. However, its underlying mechanism remains unknown. The present study was designed to determine the changes of immunogenic responses at different time-points of electroacupuncture (EA) interventions in neuropathic pain rats.

### **METHODS:**

The neuropathic pain model was established by ligation of the left sciatic nerve to induce chronic constriction injury (CCI). EA was applied at Zusanli (ST36) and Yanglingquan (GB34) for the EA groups. The thermal pain threshold was detected with an algisia-detector. The subgroups of plasma and splenic lymphocytes were determined via fluorescence-activated cell sorting. Specific inflammatory cytokines were assayed using an ELISA-based bead multiplex assay. The activities of splenic natural killer (NK) cells and cytotoxic T lymphocytes were detected by methyl thiazolyl tetrazolium colorimetric method. For confirming the involvement of NK cell in EA-analgesia, anti-asialo-ganglio-N-tetraosylceramide (anti-asialo-GM1) antibody was given to CCI rats before EA.

### **RESULTS:**

Following CCI, the thermal pain threshold of the affected hind footpad was significantly decreased,

and increased from the 3rd day to the 12th day after EA interventions, presenting a time-dependent tendency from the 5th day on. From day 3 to 5 of EA interventions, the percentages and activity of splenic NK cells, concentrations of splenic interleukin-2 (IL-2) and beta-endorphin ( $\beta$ -EP) were significantly increased. Meanwhile, the concentrations of plasma IL-2, IL-1 $\beta$  and gamma-interferon (IFN- $\gamma$ ) were significantly decreased and returned to the normal level on day 12 following EA. Plasma transforming growth factor- $\beta$  (TGF- $\beta$ ) levels were considerably upregulated on day 5 and 12 following EA. The CD4<sup>+</sup>/CD8<sup>+</sup> T cell ratio was markedly downregulated compared with the control and CCI groups on day 5 and returned to the normal level on day 12 following EA. After depleting NK cells by anti-asialo-GM1 antibody, the increased thermal pain threshold following EA intervention was obviously reduced.

### **CONCLUSIONS:**

Repeated EA interventions have a time-dependent cumulative analgesic effect in neuropathic pain rats, which is closely associated with its regulatory effects on NK cells, splenic IL-2,  $\beta$ -EP, and plasma IL-2, IL-1 $\beta$ , IFN- $\gamma$  and TGF- $\beta$  levels.



## Effect of zusanli (ST 36) moxibustion on rat mesenteric microvascular system.

<http://www.journaltcm.com/modules/Journal/contents/stories/144/16.pdf>

J Tradit Chin Med. 2014 Aug;34(4):491-7. By Xia H.

### Abstract

#### **OBJECTIVE:**

To investigate the effect of moxibustion on Zusanli (ST 36) on visceral-mesenteric vessels by observing circulation.

#### **METHODS:**

Forty-five SD rats were randomly assigned to a moxibustion, electroacupuncture (EA), and blank group. In the moxibustion group, heat stimulation of moxibustion to the Zusanli (ST 36) area of normal rats was performed for 15 min. In the EA group, needles were inserted into the Zusanli (ST 36) and lateral point [0.5 cm lateral from Zusanli (ST 36)] for 15 min. The blank group was not given any treatment. We

continuously monitored mesenteric microvascular changes with in vivo microscopic video.

#### **RESULTS:**

Moxibustion and EA to Zusanli (ST 36) increase the diameter of mesenteric arterioles and venules ( $P < 0.05$ ). There were no obvious changes in the blank group. Fine arterial diameter peaked at 12 min in the moxibustion group, while it peaked at 15 min in the EA group.

#### **CONCLUSION:**

The stimulation of moxibustion and acupuncture to Zusanli (ST 36) has immediate effects on expanding the microvasculature. This dilation may be the mechanism of the gastrointestinal effect of Zusanli (ST 36).



**ATCM dedicated to Chinese medicine 20 years!**