

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

# TCM Research Updates

Issue No 20  
1<sup>st</sup> October 2016



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# Cost-Effectiveness of Non-Invasive and Non-Pharmacological Interventions for Low Back Pain: a Systematic Literature Review.

<http://www.ncbi.nlm.nih.gov/pubmed/27550240>

Appl Health Econ Health Policy. 2016 Aug 22. [Epub ahead of print]

By Andronis L

## **BACKGROUND:**

Low back pain (LBP) is a major health problem, having a substantial effect on peoples' quality of life and placing a significant economic burden on healthcare systems and, more broadly, societies. Many interventions to alleviate LBP are available but their cost effectiveness is unclear.

## **OBJECTIVES:**

To identify, document and appraise studies reporting on the cost effectiveness of non-invasive and non-pharmacological treatment options for LBP.

## **METHODS:**

Relevant studies were identified through systematic searches in bibliographic databases (EMBASE, MEDLINE, PsycINFO, Cochrane Library, CINAHL and the National Health Service Economic Evaluation Database), 'similar article' searches and reference list scanning. Study selection was carried out by three assessors, independently. Study quality was assessed using the Consensus on Health Economic Criteria checklist. Data were extracted using customized extraction forms.

## **RESULTS:**

Thirty-three studies were identified. Study interventions were categorised as: (1) combined physical exercise and psychological therapy, (2) physical exercise therapy only, (3) information and education, and (4) manual therapy. Interventions assessed within each category varied in terms of their components and delivery. In general, combined physical and psychological treatments, information and education interventions, and manual therapies appeared to be cost effective when compared with the study-specific comparators. There is inconsistent evidence around the cost effectiveness of physical exercise programmes as a whole, with yoga, but not group exercise, being cost effective.

## **CONCLUSIONS:**

The identified evidence suggests that combined physical and psychological treatments, medical yoga, information and education programmes, spinal manipulation and acupuncture are likely to be cost-effective options for LBP.

# Effect of Electroacupuncture in "Zusanli" and "Kunlun" Acupoints on TLR4 Signaling Pathway of Adjuvant Arthritis Rats.

<http://www.ncbi.nlm.nih.gov/pubmed/27574922>

*Am J Ther.* 2016 Aug 29. [Epub ahead of print]

By Dong ZQ

## **Abstract**

### **BACKGROUND:**

Rheumatoid arthritis (RA) is a chronic systemic autoimmune disease. Previous study suggested that toll-like receptor (TLR) signaling pathway contributes to the development and progression of RA. In recent years, acupuncture has become one of the most vital treatments of arthralgia. But little is known about the mechanisms of improving RA by acupuncture.

### **STUDY QUESTION:**

The study studied the effect of electroacupuncture in "Zusanli" and "Kunlun" acupoints on the expression of TLR4, myeloid differentiation factor 88 (MYD88), and NF- $\kappa$ B in adjuvant arthritis rats to clarify the molecular mechanism of acupuncture of RA.

### **STUDY DESIGN:**

A rat model of adjuvant arthritis was established with injection of 0.1 mL Freund complete adjuvant in the right hindlimb footpad. We next punctured the Zusanli and Kunlun acupoints with  $0.25 \times 40$ -mm acupuncture needles to 5-mm depth. Then, we performed

electroacupuncture treatment for 28 days with frequency of 2 Hz and intensity of 2 mA, once a day and 30 minutes each time.

### **MEASURES AND OUTCOMES:**

Arthritis index and paw swelling were measured every week. FQ-PCR and western blot were used to detect the expression of TLR4, MYD88, and NF- $\kappa$ B.

### **RESULTS:**

Paw swelling of rats injected with Freund complete adjuvant was more serious than that of the normal rats, which illustrated the successful establishment of adjuvant arthritis rat model. After treatment for 14 days, the paw swelling and joint symptoms score decreased, paw tissue inflammation eased in the rats of treatment group compared with the model group during the same period. After treatment for 28 days, the expression of TLR4, MYD88, and NF- $\kappa$ B in the ankle bone tissues decreased at both mRNA and protein levels.

### **CONCLUSIONS:**

Stimulation with electric needle in Zusanli and Kunlun acupoints can reduce the expression of TLR4, MYD88, and NF- $\kappa$ B, which play an important role in treatment of adjuvant arthritis.

## Battlefield acupuncture: Opening the door for acupuncture in Department of Defense/Veteran's Administration health care.

<http://www.ncbi.nlm.nih.gov/pubmed/27601311>

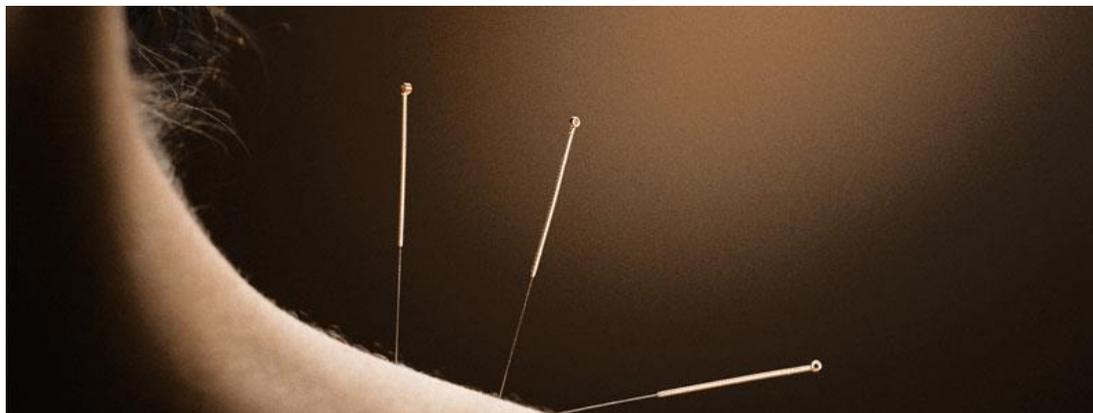
Nurs Outlook. 2016 Sep-Oct;64(5):491-8.

By Walker PH

### Abstract

Battlefield acupuncture is a unique auricular acupuncture procedure which is being used in a number of military medical facilities throughout the Department of Defense (DoD). It has been used with anecdotal published positive impact with warriors experiencing polytrauma, post-traumatic stress disorder, and traumatic brain injury. It has also been effectively used to treat warriors with muscle and back pain from carrying heavy combat equipment in austere environments. This article highlights the history within the DoD related to the need for nonpharmacologic/opioid pain management across the continuum of care from combat situations, during evacuation, and throughout recovery and rehabilitation. The article describes the history of auricular acupuncture and details

implementation procedures. Training is necessary and partially funded through DoD and Veteran's Administration (VA) internal Joint Incentive Funds grants between the DoD and the VA for multidisciplinary teams as part of a larger initiative related to the recommendations from the DoD Army Surgeon General's Pain Management Task Force. Finally, Uniformed Services University of the Health Sciences School of Medicine and Graduate School of Nursing faculty members present how this interdisciplinary training is currently being integrated into both schools for physicians and advanced practice nurses at the Uniformed Services University of the Health Sciences. Current and future research challenges and progress related to the use of acupuncture are also presented.



# Evidence-Based Evaluation of Complementary Health Approaches for Pain Management in the United States.

<http://www.ncbi.nlm.nih.gov/pubmed/27594189>

Mayo Clin Proc. 2016 Sep;91(9):1292-306.  
BY Nahin RL

## Abstract

Although most pain is acute and resolves within a few days or weeks, millions of Americans have persistent or recurring pain that may become chronic and debilitating. Medications may provide only partial relief from this chronic pain and can be associated with unwanted effects. As a result, many individuals turn to complementary health approaches as part of

their pain management strategy. This article examines the clinical trial evidence for the efficacy and safety of several specific approaches-acupuncture, manipulation, massage therapy, relaxation techniques including meditation, selected natural product supplements (chondroitin, glucosamine, methylsulfonylmethane, S-adenosylmethionine), tai chi, and yoga-as used to manage chronic pain and related disability associated with back pain, fibromyalgia, osteoarthritis, neck pain, and severe headaches or migraines.

## Reduction in postpartum weight with laser acupuncture: A randomized control trial.

<http://www.ncbi.nlm.nih.gov/pubmed/27559981>

Medicine (Baltimore). 2016 Aug;95(34):e4716.

By Hung YC

### BACKGROUND:

Gestational weight gain and weight retention at 1 year after delivery are associated with long-term obesity. We aimed to investigate the effect of laser acupuncture therapy on postpartum weight control.

### METHODS:

We randomly assigned 66 subjects with postpartum weight retention to a laser acupuncture group and control group. The subjects were treated at acupoints including the stomach and hunger points of the ear, ST25, ST28, ST40, SP15, CV9, and SP6 by using verum or sham laser acupuncture over 5 sessions per week. After 12 treatment sessions, the differences in the body mass index (BMI), body fat percentage (BFP), and waist-to-buttocks ratio

(WBR) of the patients were analyzed and compared between the laser acupuncture and control groups via analysis of variance, chi-square tests, and stepwise regression tests.

### RESULTS:

The characteristics of the patients did not significantly differ between the laser acupuncture and control groups. Analysis of repeated measures data between the laser acupuncture and control groups indicated the presence of significant differences in postpartum BMI ( $P < 0.001$ ) and BFP ( $P < 0.001$ ); however, no significant difference was observed for WBR ( $P = 0.09$ ).

### CONCLUSION:

Laser acupuncture reduces postpartum weight retention by improving BMI and BFP, but does not impact the WBR following short-term treatment.

# Electroacupuncture for patients with diarrhea-predominant irritable bowel syndrome or functional diarrhea: A randomized controlled trial.

<http://www.ncbi.nlm.nih.gov/pubmed/27310980>

Medicine (Baltimore). 2016 Jun;95(24):e3884.

By Zheng H

## Abstract

Diarrhea-predominant irritable bowel syndrome (IBS-D) and functional diarrhea (FD) are highly prevalent, and the effectiveness of acupuncture for managing IBS-D and FD is still unknown. The aim of this study was to compare the effectiveness of electroacupuncture with loperamide. It was a prospective, randomized, parallel group controlled trial. A total of 448 participants were randomly assigned to He electroacupuncture group (n = 113), Shu-Mu electroacupuncture group (n = 111), He-Shu-Mu electroacupuncture group (n = 112), or loperamide group (n = 112). Participants in the 3 acupuncture groups received 16 sessions of electroacupuncture during a 4-week treatment phase, whereas participants in the loperamide group received oral loperamide 2 mg thrice daily. The primary outcome was the change from baseline in stool frequency at the end of the 4-weeks treatment. The secondary outcomes were the Bristol scale, the MOS 36-item short form health survey (SF-36), the weekly average number of days with normal defecations and the proportion of adverse events. Stool frequency was significantly reduced at the end of the 4-

week treatment in the 4 groups (mean change from baseline, 5.35 times/week). No significant difference was found between the 3 electroacupuncture groups and the loperamide group in the primary outcome (He vs. loperamide group [mean difference 0.6, 95% CI, -1.2 to 2.4]; Shu-Mu vs. loperamide group [0.4, 95% CI, -1.4 to 2.3]; He-Shu-Mu vs. loperamide group [0.0, 95% CI, -1.8 to 1.8]). Both electroacupuncture and loperamide significantly improved the mean score of Bristol scale and increased the weekly average number of days with normal defecations and the mean scores of SF-36; they were equivalent in these outcomes. However, the participants in electroacupuncture groups did not report fewer adverse events than those in the loperamide group. Similar results were found in a subgroup analysis of separating patients with IBS-D and FD patients. Electroacupuncture is equivalent to loperamide for reducing stool frequency in IBS-D and FD patients. Further studies on cost effectiveness of acupuncture are warranted.

# Electroacupuncture and splinting versus splinting alone to treat carpal tunnel syndrome: a randomized controlled trial.

<http://www.ncbi.nlm.nih.gov/pubmed/27270119>

CMAJ. 2016 Sep 6;188(12):867-75

By Chung VC

## Abstract

### **BACKGROUND:**

The effectiveness of acupuncture for managing carpal tunnel syndrome is uncertain, particularly in patients already receiving conventional treatments (e.g., splinting). We aimed to assess the effects of electroacupuncture combined with splinting.

### **METHODS:**

We conducted a randomized parallel-group assessor-blinded 2-arm trial on patients with clinically diagnosed primary carpal tunnel syndrome. The treatment group was offered 13 sessions of electroacupuncture over 17 weeks. The treatment and control groups both received continuous nocturnal wrist splinting.

### **RESULTS:**

Of 181 participants randomly assigned to electroacupuncture combined with splinting (n = 90) or splinting alone (n = 91), 174 (96.1%) completed all follow-up. The electroacupuncture group showed greater improvements at 17 weeks in symptoms (primary outcome of Symptom Severity Scale score mean difference [MD] -0.20, 95% confidence interval [CI] -0.36 to -0.03), disability (Disability of Arm, Shoulder and Hand Questionnaire score MD -6.72, 95% CI -10.9 to -2.57), function (Functional Status

Scale score MD -0.22, 95% CI -0.38 to -0.05), dexterity (time to complete blinded pick-up test MD -6.13 seconds, 95% CI -10.6 to -1.63) and maximal tip pinch strength (MD 1.17 lb, 95% CI 0.48 to 1.86). Differences between groups were small and clinically unimportant for reduction in pain (numerical rating scale -0.70, 95% CI -1.34 to -0.06), and not significant for sensation (first finger monofilament test -0.08 mm, 95% CI -0.22 to 0.06).

### **INTERPRETATION:**

For patients with primary carpal tunnel syndrome, chronic mild to moderate symptoms and no indication for surgery, electroacupuncture produces small changes in symptoms, disability, function, dexterity and pinch strength when added to nocturnal splinting.

### **TRIAL REGISTRATION:**

Chinese Clinical Trial Register no. ChiCTR-TRC-11001655

([www.chictr.org.cn/showprojen.aspx?proj=7890](http://www.chictr.org.cn/showprojen.aspx?proj=7890)); subsequently deposited in the World Health Organization International Clinical Trials Registry Platform ([apps.who.int/trialsearch/Trial2.aspx?TrialID=ChiCTR-TRC-11001655](http://apps.who.int/trialsearch/Trial2.aspx?TrialID=ChiCTR-TRC-11001655)).

# Moxibustion Treatment for Knee Osteoarthritis: A Systematic Review and Meta-Analysis.

<http://www.ncbi.nlm.nih.gov/pubmed/27057863>

Medicine (Baltimore). 2016 Apr;95(14):e3244.

By Li A

## Abstract

To determine whether the administration of moxibustion is an effective treatment for knee osteoarthritis (KOA). We conducted a search of relevant articles using Medline, EMBASE, the Web of Science, and the Cochrane Library published before October 2015. The Western Ontario and McMaster Universities' Osteoarthritis Index (WOMAC scale) and the short form 36 questionnaire (SF-36 scale) were assessed. Evidence grading was evaluated according to the Grading of Recommendations, Assessment, Development and Evaluation system. Four studies containing 746 participants fulfilled the inclusion criteria in the final analysis. In terms of quality of life (QOL), the meta-analysis of 2 randomized clinical trials (RCTs) showed significantly effects of moxibustion only in bodily pain (BP) compared

with those in the control group (n=348; weighted mean difference [WMD], 4.36; 95% confidence intervals [CIs], 2.27-6.44;  $P < 0.0001$ ; heterogeneity:  $\chi^2 = 1.53$ ,  $P = 0.22$ ,  $I^2 = 34\%$ ) in all of the subcategories of the SF-36 scale, with moderate quality. The meta-analysis of the 2 included trials showed that there was not a statistically significant difference in the pain or function subscale for the WOMAC scale when the 2 groups were compared (n=322; WMD, 17.63; 95% CI, -23.15-58.41;  $P = 0.40$ ; heterogeneity:  $\chi^2 = 19.42$ ,  $P < 0.0001$ ,  $I^2 = 95\%$ ), with low or moderate quality separately. The administration of moxibustion can to some extent alleviate the symptoms of KOA. More rigorous, randomized controlled trials are required in the future.



# Efficacy and safety assessment of acupuncture and nimodipine to treat mild cognitive impairment after cerebral infarction: a randomized controlled trial.

<http://www.ncbi.nlm.nih.gov/pubmed/27623621>

BMC Complement Altern Med. 2016 Sep 13;16:361.

By Wang S

## Abstract

### **BACKGROUND:**

Cerebral infarction frequently leads to mild cognitive impairment (MCI). Prompt management of MCI can prevent vascular dementia and improve patient outcome. This single center randomized controlled trial aims to investigate the efficacy and safety of acupuncture and nimodipine to treat post-cerebral infarction MCI.

### **METHODS:**

A total of 126 Chinese patients with post-cerebral infarction MCI recruited from the First Teaching Hospital of Tianjin University of Traditional Chinese Medicine between April 2013 and June 2014 were randomized at 1:1:1 ratio into nimodipine alone (30 mg/time and 3 times daily), acupuncture alone (30 min/time, 6 times/week), and nimodipine + acupuncture groups. The treatments were 3 months. Cognitive function was evaluated using Montreal Cognitive Assessment (MoCA) scale at enrollment interview, at the end of 3-month therapy, and at the post-treatment 3-month follow-up.

### **RESULTS:**

The per-protocol set included 39, 40, and 40 patients from nimodipine

alone, acupuncture alone, and the combination group, respectively, was analyzed. Intra-group comparison revealed that MoCA score at the follow-up improved significantly by  $15.8 \pm 10.9$ ,  $20.9 \pm 13.8$  %, and  $30.2 \pm 19.7$  % compared with the baseline MoCA for nimodipine alone, acupuncture alone, and the combination group, respectively. Inter-group comparison demonstrated that the combination therapy improved MoCA score ( $5.5 \pm 2.2$ ) at significantly higher extent than nimodipine alone ( $3.1 \pm 1.8$ ) and acupuncture alone ( $4.3 \pm 2.3$ ) at the follow-up (All  $P < 0.05$ ), and significantly higher proportion of patients in acupuncture alone group (80 %) and the combination therapy group (90 %) than in nimodipine alone group (56.4 %) showed  $\geq 12$  % MoCA score improvement compared with the baseline MoCA (All  $P < 0.05$ ). No adverse event was reported during the study.

### **CONCLUSION:**

Acupuncture may be used as an additional therapy to conventional pharmacological treatment to further improve the clinical outcomes of patients with post-cerebral infarction MCI.

# Changes in small intestinal motility and related hormones by acupuncture stimulation at Zusanli (ST 36) in mice.

<http://www.ncbi.nlm.nih.gov/pubmed/27586472>

Chin J Integr Med. 2016 Sep 1.

By Jang JH

## **Abstract**

### **OBJECTIVE:**

To clarify the effects of acupuncture stimulation at Zusanli (ST 36) on the hormonal changes.

### **METHODS:**

Eight-week-old male C57BL/6 mice received acupuncture stimulation at acupoint ST 36 or Quchi (LI 11) once a day for 3 or 5 days in the acupuncture-stimulated groups, but not received in the normal group (n =6 in each group). On day 3 or 5, animals were given 0.1 mL of charcoal orally with a bulbed steel needle, 30 min after the last acupuncture stimulation. Ten minutes later, mice were anesthetized, and the intestinal transit and the concentrations of vasoactive intestinal peptide (VIP), motilin, ghrelin and gastrin in the serum were measured.

### **RESULTS:**

Compared to no acupuncture stimulation, acupuncture stimulation at ST 36 for 5 days increased the intestinal transit and down-regulated the concentration of VIP and up-regulated the concentrations of motilin, ghrelin and gastrin (P <0.05 or 0.01), whereas acupuncture stimulation at LI 11 did not change them significantly (P >0.05).

### **CONCLUSION:**

Acupuncture stimulation at ST 36 for 5 days enhances the small intestinal motility and regulates the secretion of hormones related to small intestinal motility.