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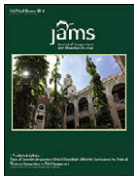

RECOMMENDED ARTICLES

In this issue of the journal, the Recommended Articles are selected from the journals citing the articles of the Journal of Acupuncture and Meridian Studies and from the Journal of Pharmacopuncture (ISSN: 1226-4849) published in English.

(1) Spine (Phila Pa 1976), 2005, Volume 30, Issue 8, Article number 944—963

Acupuncture and dry-needling for low back pain: an updated systematic review within the framework of the cochrane collaboration.

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Abstract
Objectives: To assess the effects of acupuncture and dry-needling for the treatment of nonspecific low back pain.
Background: Low back pain is usually a self-limiting condition that tends to improve spontaneously over time. However, for many people, back pain becomes a chronic or recurrent problem for which a large variety of therapeutic interventions are employed.
Search strategy: We updated the searches from 1996 to February 2003 in CENTRAL, MEDLINE, and EMBASE. We also searched the Chinese Cochrane Centre database of clinical trials and Japanese databases to February 2003.
Selection criteria: Randomized controlled trials of acupuncture (that involved needling) or dry-needling for adults with nonspecific acute/subacute or chronic low back pain.
Data collection and analysis: Two reviewers independently assessed methodologic quality (using the criteria recommended by the Cochrane Back Review Group) and extracted data. The trials were combined using meta-analysis methods or levels of evidence when the data reported did not allow statistical pooling.
Results: Thirty-five randomized clinical trials were included: 20 were published in English, 7 in Japanese, 5 in Chinese, and 1 each in Norwegian, Polish, and German. There were only 3 trials of acupuncture for acute low back pain. These studies did not justify firm conclusions because of their small sample sizes and low methodologic quality. For chronic low back pain, there is evidence of pain relief and functional improvement for acupuncture compared to no treatment or sham therapy. These effects were only observed immediately after the end of the sessions and in short-term follow-up. There is also evidence that acupuncture, added to other conventional therapies, relieves pain and improves function better than the conventional therapies alone. However, the effects are only small. Dry-needling appears to be a useful adjunct to other therapies for chronic low back pain. No clear recommendations could be made about the most effective acupuncture technique.
Conclusions: The data do not allow firm conclusions regarding the effectiveness of acupuncture for acute low back pain. For chronic low back pain, acupuncture is more effective for pain relief and functional improvement than no treatment or sham treatment immediately after treatment and in the short-term only. Acupuncture is not more effective than other conventional and "alternative" treatments. The data suggest that acupuncture and dry-needling may be useful adjuncts to other therapies for chronic low back pain. Because most of the studies were of lower methodologic quality, there is a clear need for higher quality trials in this area.

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Keywords: systematic review, meta-analysis, Cochrane Collaboration, acupuncture, low back pain.

(2) Journal of Substance Abuse Treatment, Volume 17, Issue 4, 1999

The Value of Acupuncture Detoxification Programs in a Substance Abuse Treatment System

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Abstract
Our purpose is to compare baseline characteristics and detoxification readmission rates of clients treated at outpatient acupuncture programs and at short-term residential programs, two options available to persons seeking substance abuse detoxification. This was a retrospective cohort study using data on clients discharged from publicly funded detoxification programs in Boston between January 1993 and September 1994. Multivariate models were used to examine the effect on 6-month detoxification readmission rates of treatment at residential detoxification programs (used by 6,907 clients) versus at outpatient acupuncture programs (used by 1,104 clients) after adjusting for baseline differences. Acupuncture clients were less likely to be readmitted for detoxification within 6 months (odds ratio [OR] 0.71, 95% confidence interval [CI] 0.53—0.95). Similar results were found when the analysis was performed on a subsample of clients that were relatively similar in terms of baseline characteristics (OR 0.61, 95% CI 0.39—0.94). We determined that acupuncture detoxification programs are a useful component of a substance abuse treatment system.
Keywords: acupuncture, detoxification, substance abuse treatment.

(3) PLoS ONE, 2009, Volume 47, Issue 3, Article number 1077—85

Traditional Chinese acupuncture and placebo (sham) acupuncture are differentiated by their effects on mu-opioid receptors (MORs).

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Abstract
Controversy remains regarding the mechanisms of acupuncture analgesia. A prevailing theory, largely unproven in humans, is that it involves the activation of endogenous opioid antinociceptive systems and mu-opioid receptors (MORs). This is also a neurotransmitter system that mediates the effects of placebo-induced analgesia. This overlap in potential mechanisms may explain the lack of differentiation between traditional acupuncture and either non-traditional or sham acupuncture in multiple controlled clinical trials. We compared both short- and long-term effects of traditional Chinese acupuncture (TA) versus sham acupuncture (SA) treatment on in vivo MOR binding availability in chronic pain patients diagnosed with fibromyalgia (FM). Patients were randomized to receive either TA or SA treatment over the course of 4 weeks. Positron emission tomography (PET) with (11)C-carfentanil was performed once during the first treatment session and then repeated a month later following the eighth treatment. Acupuncture therapy evoked short-term increases in MOR binding potential, in multiple pain and sensory processing regions including the cingulate (dorsal and subgenual), insula, caudate, thalamus, and amygdala. Acupuncture therapy also evoked long-term increases in MOR binding potential in some of the same structures including the cingulate (dorsal and perigenual), caudate, and amygdala. These short- and long-term effects were absent in the sham group where small reductions were observed, an effect more consistent with previous placebo PET studies. Long-term increases in MOR BP following TA were also associated with greater reductions in clinical pain. These findings suggest that divergent MOR processes may mediate clinically relevant analgesic effects for acupuncture and sham acupuncture.
Keywords: Acupuncture, Opioid, Mu, Fibromyalgia, Pain, Positron emission tomography.

(4) Journal of Pharmacopuncture, Vol. 19 No. 1, p37—44, 2016

Nanopharmaceutical Approach for Enhanced Anti-cancer Activity of Betulinic Acid in Lung-cancer Treatment via Activation of PARP: Interaction with DNA as a Target

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Abstract

Objectives: This study examined the relative efficacies of a derivative of betulinic acid (dBA) and its poly (lactide- co-glycolide) (PLGA) nano-encapsulated form in A549 lung cancer cells in vivo and in co-mutagen [sodium arsenite (SA) + benzo]undefined[a]pyrene (BaP)]-induced lung cancer in mice in vivo.

Methods: dBA was loaded with PLGA nanoparticles by using the standard solvent displacement method. The sizes and morphologies of nano-dBA (NdBA) were determined by using transmission electron microscopy (TEM), and their intracellular localization was verified by using confocal microscopy. The binding and interaction of NdBA with calf thymus deoxyribonucleic acid (CT-DNA) as a target were analyzed by using conventional circular dichroism (CD) and melting temperature (Tm) profile data. Apoptotic signalling cascades in vitro and in vivo were studied by using an enzyme-linked immunosorbent assay (ELISA); the ability of NdBA to cross the blood-brain barrier (BBB) was also examined. The stage of cell cycle arrest was confirmed by using a fluorescence-activated cell-sorting (FACS) data analysis.

Results: The average size of the nanoparticles was ~ 110 nm. Confocal microscopy images confirmed the presence of NdBA in the cellular cytoplasm. The bio-physical properties of dBA and NdBA ascertained from the CD and the Tm profiles revealed that NdBA had greater interaction with the target DNA than dBA did. Both dBA and NdBA arrested cell proliferation at G0/G1, NdBA showing the greater effect. NdBA also induced a greater degree of cytotoxicity in A549 cells, but it had an insignificant cytotoxic effect in normal L6 cells. The results of flow cytometric, cytogenetial and histopathological studies in mice revealed that NdBA caused less nuclear condensation and DNA damage than dBA did. TEM images showed the presence of NdBA in brain samples of NdBA fed mice, indicating its ability to cross the BBB.

Conclusion: Thus, compared to dBA, NdBA appears to have greater chemoprotective potential against lung cancer.

Keywords: A549 cell line, betulinic acid, drug-DNA interaction, mice, poly (lactide-co-glycolide).

(5) Journal of Pharmacopuncture, Vol. 18, No. 3, p 42—48, 2015

Single-dose Toxicity of Guseonwangdo-go Glucose 5% Intravenous Injection in a Rat Model

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Abstract

Objectives: The aim of the study is to investigate both the single-dose intramuscular injection toxicity and the approximate lethal dose of water-solubleCarthami-flos and Cervi cornu parvum pharmacopuncture (WCFC) in male and female Sprague-Dawley (SD) rats.

Methods: The study was conducted at Biotoxtech Co. according to the Good Laboratory Practice (GLP) regulation and the toxicity test guidelines of the Ministry of Food and Drug Safety (MFDS) after approval of the Institutional Animal Care and Use Committee. Dosages for the control, high dose, middle dose and low dose groups were 0.5 mL/animal of saline and 0.5, 0.25 and 0.125 mL/animal of WCFC, respectively. WCFC was injected into the muscle of the left femoral region by using a disposable syringe (1 mL, 26 gauge). The general symptoms and mortality were observed 30 minutes, 1, 2, 4, and 6 hours after the first injection and then daily for 14 days after the injection. The body weights of the SD rats were measured on the day of the injection (before injection) and on the third, seventh, and fourteenth days after the injection. Serum biochemical and hematologic tests, necropsy examinations, and histopathologic examinations at the injection site were performed after the observation period.

Results: No deaths, abnormal clinical symptoms, or significant weight changes were observed in either male or female SD rats in the control or the test (0.125, 0.25, and 0.5 mL/animal) groups during the observation period. No significant differences in hematology and serum biochemistry and no macroscopic abnormalities at necropsy were found. No abnormal reactions at injection sites were noted on the topical tolerance tests.

Conclusion: The results of this single-dose toxicity study show that WCFC is safe, its lethal doses in male and female SD rats being estimated to be higher than 0.5 mL/animal.

Keywords: aqua acupuncture, Carthami-flos, Cervi cornu parvum, intramuscular injection, single-dose toxicity test.

(6) Journal of Pharmacopuncture, Vol. 18, No. 4, p. 7–11, 2015

Honey Bee Venom (*Apis mellifera*) Contains Anticoagulation Factors and Increases the Blood-clotting Time

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Abstract
Objectives: Bee venom (BV) is a complex mixture of proteins and contains proteins such as phospholipase and melittin, which have an effect on blood clotting and blood clots. The mechanism of action of honey bee venom (HBV, Apis mellifera) on human plasma proteins and its anti-thrombotic effect were studied. The purpose of this study was to investigate the anti-coagulation effect of BV and its effects on blood coagulation and purification.
Methods: Crude venom obtained from Apis mellifera was selected. The anti-coagulation factor of the crude venom from this species was purified by using gel filtration chromatography (sephadex G-50), and the molecular weights of the anti-coagulants in this venom estimated by using sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE). Blood samples were obtained from 10 rabbits, and the prothrombin time (PT) and the partial thromboplastin time (PTT) tests were conducted. The approximate lethal dose (LD) values of BV were determined.
Results: Crude BV increased the blood clotting time. For BV concentrations from 1 to 4 mg/mL, clotting was not observed even at more than 300 seconds, standard deviations (SDs) $= \pm 0.71$; however, clotting was observed in the control group 13.8 s, SDs $= \pm 0.52$. Thus, BV can be considered as containing anti-coagulation factors. Crude BV is composed 4 protein bands with molecular weights of 3, 15, 20 and 41 kilodalton (kDa), respectively. The LD_{50} of the crude BV was found to be 177.8 μg/mouse.
Conclusion: BV contains anti-coagulation factors. The fraction extracted from the Iranian bees contains proteins that are similar to anti-coagulation proteins, such as phospholipase A_2 (PLA_2) and melittin, and that can increase the blood clotting times in vitro.
Keywords: anti-coagulants, bee venom, chromatography, LD_{50}.