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RECOMMENDED ARTICLES

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

(1) Evidence-based Complementary and Alternative Medicine, 2015, Volume 2015, Article number 860934 Understanding Fibroblasts in Order to Comprehend the Osteopathic Treatment of the Fascia

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Abstract

The osteopathic treatment of the fascia involves several techniques, each aimed at allowing the various layers of the connective system to slide over each other, improving the responses of the afferents in case of dysfunction. However, before becoming acquainted with a method, one must be aware of the structure and function of the tissue that needs treating, in order to not only better understand the manual approach, but also make a more conscious choice of the therapeutic technique to employ, in order to adjust the treatment to the specific needs of the patient. This paper examines the current literature regarding the function and structure of the fascial system and its foundation, that is, the fibroblasts. These connective cells have many properties, including the ability to contract and to communicate with one another. They play a key role in the transmission of the tension produced by the muscles and in the management of the interstitial fluids. They are a source of nociceptive and proprioceptive information as well, which is useful for proper functioning of the body system. Therefore, the fibroblasts are an invaluable instrument, essential to the understanding of the therapeutic effects of osteopathic treatment. Scientific research should make greater efforts to better understand their functioning and relationships.

(2) Neural Regeneration Research, 2015, Volume 10, Issue 7, Pages 1101–1106. Evidence for Novel Age-dependent Network Structures as a Putative Primo Vascular Network in the Dura Mater of the Rat Brain

Ho-Sung Lee, Dai-In Kang, Seung Zhoo Yoon, Yeon Hee Ryu, Inhyung Lee, Hoon-Gi Kim, Byung-Cheon Lee, Ki Bog Lee* *Corresponding Author's Affiliation: Korea Atomic Energy Research Institute, Daejeon, South Korea. kblee@kaeri.re.kr

Abstract

With chromium-hematoxylin staining, we found evidence for the existence of novel age-dependent network structures in the dura mater of rat brains. Under stereomicroscopy, we noticed that chromium-hematoxylin-stained threadlike

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structures, which were barely observable in 1-week-old rats, were networked in specific areas of the brain, for example, the lateral lobes and the cerebella, in 4-week-old rats. In 7-week-old rats, those structures were found to have become larger and better networked. With phase contrast microscopy, we found that in 1-week-old rats, chromium-hematoxylin-stained granules were scattered in the same areas of the brain in which the network structures would later be observed in the 4- and 7-week-old rats. Such age-dependent network structures were examined by using optical and transmission electron microscopy, and the following results were obtained. The scattered granules fused into networks with increasing age. Cross-sections of the age-dependent network structures demonstrated heavily-stained basophilic substructures. Transmission electron microscopy revealed the basophilic substructures to be clusters with high electron densities consisting of nanosized particles. We report these data as evidence for the existence of age-dependent network structures in the dura mater, we discuss their putative functions of age-dependent network structures beyond the general concept of the dura mater as a supporting matrix.

(3) PLoS ONE, 2013, Volume 8, Issue 11, Article number e81018 Peripheral Afferent Mechanisms Underlying Acupuncture Inhibition of Cocaine Behavioral Effects in Rats

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Abstract

Administration of cocaine increases locomotor activity by enhancing dopamine transmission. To explore the peripheral mechanisms underlying acupuncture treatment for drug addiction, we developed a novel mechanical acupuncture instrument (MAI) for objective mechanical stimulation. The aim of this study was to evaluate whether acupuncture inhibition of cocaine-induced locomotor activity is mediated through specific peripheral nerves, the afferents from superficial or deep tissues, or specific groups of nerve fibers. Mechanical stimulation of acupuncture point HT7 with MAI suppressed cocaine-induced locomotor activity in a stimulus time-dependent manner, which was blocked by severing the ulnar nerve or by local anesthesia. Suppression of cocaine-induced locomotor activity was elicited after HT7 stimulation at frequencies of either 50 (for Meissner corpuscles) or 200 (for Pacinian corpuscles) Hz and was not affected by block of $C/A\delta$ -fibers in the ulnar nerve with resiniferatoxin, nor generated by direct stimulation of $C/A\delta$ -fiber afferents with capsaicin. These findings suggest that HT7 inhibition of cocaine-induced locomotor activity is mediated by A-fiber activation of ulnar nerve that originates in superficial and deep tissue.

(4) Journal of Pharmacopuncture, Vol. 17, No. 2, pp. 27–33, 2014 Effects of Sumsu (*Bufonis venenum*) Pharmacopuncture Treatment on Depression in Mice

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Abstract

Objectives: The main objective of this study was to evaluate the anti-depressant effects of pharmacopuncture using sumsu (*Bufonis venenum*).

Conclusion: Sumsu pharmacopuncture attenuated depressive or anxiety-like behavior in mice stressed with chronic immobilization. These results suggest that sumsu pharmacopuncture has therapeutic potential for treating neuropsychiatric disorders such as anxiety or depression disorder.

Methods: Animals were divided into three groups (control, sham, and experimental), with eight mice per group. The sham and the experimental groups were exposed to 2 hours of immobilization stress daily for 14 days. They were also injected with normal saline (sham) or subjected to pharmacopuncture with sumsu at the acupoints HT7, SP6, and GV20 (experimental). The depression or anxiety-like behaviors of the mice in each group were evaluated 1 day after treatment.

Results: There was no difference in locomotor activity between the groups during the open-field test; i.e., all groups had normal motor function. However, the open-field and the forced-swimming tests revealed that depression and anxiety-like behaviors were decreased significantly in the group treated with sumsu pharmacopuncture.

Keywords: antidepressants, chronic immobilization stress, forced-swimming test, open-field test, pharmacopuncture, *Bufonis venenum*

(5) Journal of Pharmacopuncture, Vol. 17, No. 2, pp. 34-40, 2014

Physiological Role of a Multigrain Diet in Metabolic Regulations of Lipid and Antioxidant Profiles in Hypercholesteremic Rats

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Abstract

Objectives: The objective of the present study was to investigate the lipid and the antioxidant regulatory potential of a multigrain diet in laboratory animals with reference to lipid profiles, tissue lipid peroxidation and antioxidant status. **Methods:** Two types of diets, with or without addition of cholesterol, were used in the study – a commercial diet and a formulated multigrain diet (with *Sorghum vulgare, Avena sativa, Pennisetum typhoideum, Oryza sativa, Eleusine coracana* and *Zea mays* grains). After a 10-week period of feeding the diets to albino rats the plasma, liver and fecal lipid profiles and the hepatic and renal antioxidant status of the animals that were fed the commercial and the formulated diets (with and without cholesterol addition) were assessed.

Results: The commercial diet supplemented with cholesterol elevated the levels of plasma total lipids, total cholesterol, triglycerides, low-density lipoprotein cholesterol (LDL-C), and very low-density lipoprotein cholesterol (VLDL-C), as well as the atherogenic index (AI). The high-density lipoprotein cholesterol (HDL-C) content and the antioxidant profiles (total ascorbic acid, superoxide dismutase, catalase, glutathione peroxidase reduced glutathione) declined along with increases in lipid peroxidation. The formulated diet (with and without addition of cholesterol) was found to be more efficient than the commercial diet in controlling plasma, hepatic and fecal lipid profiles, as well as hepatic and renal lipid peroxidation and antioxidant status, than of the hypercholesteremic animals.

Conclusion: The multigrain diet used in the present study is effective in countering the hyperlipidemia and oxidative stress caused by high cholesterol intake.

Keywords: enzymatic antioxidants, fecal lipids, lipid metabolism, multigrain, non-enzymatic antioxidants, oxidative stress

(6) Journal of Pharmacopuncture, Vol. 17, No. 2, pp. 41–45, 2014 Single-dose Intramuscular Toxicity of Neutral Natured Blood Stasis Pharmacopuncture in Sprague-Dawley Rats

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Abstract

Objectives: This study was performed to analyze the single-dose toxicity of neutral natured blood stasis pharmacopuncture extracts.

Methods: All experiments were conducted at Biotoxtech, an institution authorized to perform non-clinical studies, under the regulations of Good Laboratory Practice (GLP). Sprague-Dawley rats were chosen for the pilot study. Doses of neutral natured blood stasis pharmacopuncture extracts, 0.1, 0.5 and 1.0 mL, were administered to the experimental group, and the same doses of normal saline solution were administered to the control group. This study was conducted under the approval of the Institutional Animal Ethics Committee.

Results: In all 4 groups, no deaths occurred, and the neutral natured blood stasis pharmacopuncture extracts administered by intramuscular (IM) injection was over 1.0 mL/animal. No significant changes in the body weights between the control group and the experimental group were observed. To check for abnormalities in organs and tissues, we used microscopy to examine representative histological sections of each specified organ; the results showed no significant differences in any organs or tissues. **Conclusion**: The above findings suggest that treatment with neutral natured blood stasis pharmacopuncture extracts is relatively safe. Further studies on this subject should be conducted to yield more concrete evidence.

Keywords: acupuncture intramuscular injection, neutral natured blood stasis pharmacopuncture, pharmacopuncture Sprague-Dawley rats, toxicity test