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# CONFERENCE ABSTRACTS

# International Scientific Acupuncture and Meridian Symposium 2015

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## Monitoring of the Visualization Process for the Primo Vascular System in Lymph Ducts Through a Window System

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### Abstract

This study aimed to monitor the temporal changes in the primo vascular system (PVS), which is known to be a hyaluronic-acidrich node and duct system within lymphatic and blood vessels and to be enriched with small adult stem cells with properties similar to those of very small embryonic-like stem cells. Past studies have focused mainly on the PVS in the lymph vessels near large blood vessels, such as the caudal vena cava and the lumbar vessels, and near the thoracic duct of various experimental animals. In this work, the chosen target lymph vessels were easily accessible from the skin of a rat, and long-time observations through the window system were possible with intact physiological conditions because surgical procedures were minimized. An Alcian Blue 1% solution was injected into the inguinal lymph node, and the target lymph vessels were along the superficial epigastric vessels. A series of images was taken by using an imaging system and analyzed by using an image process to extract the AB intensity changes along the PVS. This newly-developed procedure may provide a useful method for further study of the dynamic processes in the PVS in lymph vessels and the possible roles for acupuncture and meridians. **Keywords:** Lymphatics, Meridian, Primo Vascular System, Rat, Window System

## Pharmacopuncture and Acupuncture Research for ALS

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### Abstract

Amyotrophic lateral sclerosis (ALS) is a severe paralytic disorder of the central nervous system (CNS) that is characterized by age-related degeneration or elimination of the upper and the lower large motor neurons of the motor cortex, brain stem and spinal cord. ALS is a disease affecting the central nervous system; it is either sporadic or familial in origin and causes the death of motor neurons. One of the genetic factors contributing to the etiology of ALS is mutant SOD1 (mtSOD1), which

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (http:// creativecommons.org/licenses/by-nc/4.0) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited. induces vulnerability of motor neurons through protein misfolding, mitochondrial dysfunction, oxidative damage, cytoskeletal abnormalities, defective axonal transport, glutamate excitotoxicity, inadequate growth factor signaling, and neuroinflammation. Bee venom (BV) pharmacopuncture has been used in practice for the treatment of ALS. BV-treated mutant hSOD1 transgenic mice showed a decrease in the expression levels of microglia marker and phospho-p38 MAPK in the spinal cord and brainstem. Interestingly, treatment of symptomatic ALS animals with BV improved motor activity, and the median survival of the BV-treated group (139  $\pm$  3.5 days) was 18% greater than that of the control group (117  $\pm$  3.1 days). In addition, Hominis placenta (HP) pharmacopuncture and Scolopendra subspinipes mutilans (SSM) pharmacopuncture are utilized in traditional Korean medicine for the treatment of ALS. We found that HP played a protective role against LPS stimulation through inhibition of MAPK signaling and suppression of inflammation caused by neurotoxins including LPS. We also found that SSM treatment attenuated the loss of motor neurons and reduced the activation of microglial cells and astrocytes. Pharmacopuncture therapy may help improve the guality of life (QOL) in ALS patients and may delay ALS progression. The second research was a pilot study to observe the changes in the respiratory physiology parameters after Sa-am acupuncture treatment. Eighteen ALS patients received Sa-am acupuncture treatment twice a day for five days. The EtCO<sub>2</sub>, SpO<sub>2</sub>, RR, and pulse rate were measured by using capnography and oximetry for 15 min before and during treatment. Correlation of K-ALSFRS-R scores against measured parameters showed that patients who had high K-ALSFRS-R scores had greater changes in pulse rate after acupuncture stimulation; they also showed a decrease in EtCO<sub>2</sub>, RR, and pulse rate and an increase in SpO<sub>2</sub>. A comparison of the mean values of these different parameters before and after Sa-am acupuncture stimulation revealed statistically significant differences (p < 0.05) in SpO<sub>2</sub> and pulse rate, but not in EtCO<sub>2</sub> and RR. Sa-am acupuncture treatment for ALS patients seems to be more effective in the early stages of the disease. In light of the increased  $SpO_2$  values, Sa-am acupuncture appears to have a greater effect on inspiration than on expiration. As a pilot study on the effect of acupuncture in treating ALS patients, this study could be used as a basis for future research.

Keywords: Amyotrophic lateral sclerosis, ALS, Motor Neurone Disease, MND, Scolopendrid Pharmacopuncture

# The Effects of Sumsu (*Bufonis Venenum*) Pharmacopuncture Treatment on Depression in Mice

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### Abstract

**Objective:** The main objective of this experiment was to evaluate the anti-depressive-like activity associated with the use of the pharmacopuncture sumsu.

**Methods:** Animals were divided into three groups, control, sham-control, and experiment groups, consisting nine mice in each group. Among them, the sham-control and the experiment groups were exposed to 2 hours of immobilization stress for 14 days and were, respectively, injected with normal saline and sumsu pharmacopuncture at the HT7, SP6 and GV20 acupoints. The depression- or anxiety-like behavior was evaluated a day after drug treatment.

**Results:** In these experiments, the open field test and the force swimming test, depression- or anxiety-like behavior showed significant decreases in the sumsu treatment group. Moreover, no differences in locomotor activity were observed during the open field test. These results show that none of the groups had anything wrong with their motor function.

**Conclusion:** Sumsu pharmacopuncture attenuated depressive or anxiety-like behavior in the mice stressed by chronic immobilization. These results suggest that the sumsu pharmacopuncture has therapeutic potential for the treatment of neuropsychiatric disorders such as anxiety or depression.

Keywords: Antidepressants, Bufonis veneum, Chronic Immobilization Stress, Forced Swim Test, Open Field Test, Phamacopuncture

### Pharmacopuncture to Relieve Cancer Pain and Cancer-related Fatigue

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### Abstract

**Background:** Oncology acupuncture has become a new and promising field of research because more and more patients are presenting with cancer. Pharmacopuncture, injection at acupoints with pharmacological medication or herbal medicine, is a new acupuncture therapy widely available in Korea and China for treating cancer-related symptoms. However, the evidence for its efficacy is not yet clear.

**Objective:** This research aimed to determine pharmacopuncture's effectiveness for treating cancer-related symptoms, with a focus on cancer pain and cancer-related fatigue.

**Methods:** We reviewed related articles focusing on pharmacopuncture in cancer care to provide a quick sketch of pharmacopuncture in cancer care. A detailed search was performed using PUBMED and Cochrane to identify randomized controlled trials (RCTs) and systematic reviews on the use of pharmacopuncture in oncology.

**Results:** Pharmacopuncture may provide equivalent or stronger stimulation than traditional acupuncture. Although these cases had successful outcomes in the treatment of cancer pain and cancer-related fatigue, caution is needed in generalizing these results as the findings may not be transferable. Further research is needed to establish the benefits of using autonomic nerve pharmacopuncture

**Conclusion:** With caution, pharmacopuncture may be suggested as having the effect of relieving the symptoms, including cancer pain and cancer-related fatigue, in patients with cancer. Meanwhile, practical strategies with safe measures for enhancing the efficacy of pharmacopuncture in further interventions, as well as continuing research with a validated methodology, are needed.

Keywords: Cancer Pain, Autonomic Nerve Pharmacopuncture, Fatigue, Hua-Tuo-Jia-Ji-Xue