President’s Message

Dr. Angelica Fargas-Babjak

I would like to make a very exciting announcement about a new development in the CCAA. The Seirin Company in Japan and Electro-Therapeutic Devices, Inc. (ETD, Inc.) in Markham are establishing an annual award. The committee will choose a project and reward the winning applicant with the amount of $5,000.

The creation of the ETD / Seirin Award began with a dream. Two years ago, Mr. Choong from ETD, Inc. arranged for the CEOs of the Seirin company to visit McMaster University in order to establish an award for research. (A picture is sometimes worth a thousand words!)

The ETD / Seirin Award will be presented to an individual or group demonstrating an excellent contribution to the field of acupuncture. Entries will be judged by representatives from McMaster University, University of Alberta, and Canadian Memorial Chiropractic College.

The successful applicant must agree to share their project and outcomes with ETD, Inc. and its affiliates. Also, the completed project must be presented in an appropriate professional journal, meeting, or both.

We would like to encourage members of the CCAA who have the interest and ability to perform clinical research to take advantage of this opportunity. Please discuss your ideas with the Contemporary Medical Acupuncture instructors to receive valuable feedback.

Currently, the Seirin Company is very interested in supporting a project that would test a new type of press needle (PYONEX) on a population of children and adults who suffer from chronic pain.

Another exciting development in the CCAA is that the Executive Committee and Board of Directors are in the process of organizing the first International Contemporary Acupuncture Meeting in Niagara-on-the-Lake in April 2012. If you have any hidden talents and would like to contribute to the Organizing Committee, please contact Dr. David Salanki at: info@contemporaryacupuncture.ca.

We welcome new members to the CCAA and wish all of our graduates success and satisfaction with the integration of Contemporary Acupuncture into their practices.

I wish you all a peaceful and joyous Christmas season and all the best in the New Year!

Left to right: A Fargas-Babjak; R Ogura, Seirin; D Homer; V Cannon; KC Choong, ETD, Inc.
Clinical Pearl

Dr. Michael Prebeg

In cases of non-complicated, chronic low back pain, you should always assess gluteus medius and maximus activity and treat inhibition by needling BL-53’ and BL-54’. Stimulation of the superior and inferior gluteal nerves will help stabilize the pelvis and reflexively modulate the L4-5 nerve roots. An even greater effect may be obtained by concurrently needling the L1-2 paravertebral musculature, because these nerve roots control the psoas muscle.

This treatment will address the segmental levels of L1–S1 and the agonist-antagonist interactions associated with chronic low back pain. Your patients are likely to experience a dramatic reduction in their symptoms.

Association Update

Dr. David Salanki

The CCAA has been a hub of activity over the past few months, with continued growth in our membership. In addition, the CCAA website has been expanded with several new features, including an archive which allows members to access and read past issues of AcuPoint, which are delivered electronically every quarter.

One of the most exciting new features of the website is the AcuPub section. AcuPub is coordinated by Dr. Elizabeth Kauric and provides CCAA members with access to hundreds of current articles and abstracts related to the science and practice of contemporary acupuncture.

New links are added on a regular basis, which allows members to stay on top of the latest research in the acupuncture field. To access the AcuPub database, simply login and click on the AcuPub dropdown tab. Scroll to the bottom of the page and click on “Get a list of all AcuPub articles.”

The CCAA’s newest committee is the Academic Liaison Committee, which is chaired by Ms. Lauren MacArthur. The purpose of this committee is to communicate with and broaden the understanding of contemporary acupuncture amongst students who are currently enrolled in professional programs which include acupuncture in their scope of practice, such as physiotherapy, chiropractic, and massage therapy. We wish to thank Lauren for taking on this important challenge.

Finally, planning for the proposed 2012 McMaster University / CCAA International Contemporary Acupuncture Symposium continues on schedule. This exciting project is chaired by CCAA board member, Dr. Ravinder Ohson. It will be the first Canadian conference of its kind, bringing together the best research minds in the world on contemporary acupuncture. Please mark your calendars for Thursday–Sunday, April 26–29, 2012. This is one event you will not want to miss!

Acupuncture Research Award

Chris O’Connor

As CCAA President Dr. Fargas-Babjak announced, a new annual award of $5,000 is now available to fund research and case studies relating to acupuncture. Submissions will be reviewed by representatives of McMaster University, University of Alberta, and Canadian Memorial Chiropractic College.

Applicants will be required to submit a formal research proposal directly to ETD, Inc. Guidelines for this submission are outlined on Page 1 of this edition of AcuPoint, and anyone requiring further information is encouraged to contact:

Mr. KC Choong at schoong@etdinc.ca, or call him toll free at 1-877-475-8344.

Completed applications are to be submitted to Mr. Choong via email to the address above, or by mail to:

Electro-Therapeutic Devices, Inc.
70 Esna Park Drive, Unit 4
Markham, Ontario Canada L3R 6E7

The CCAA would like to thank ETD, Inc. and the Seirin Company for making this opportunity available to our members.
Clinical Applications of Acupuncture Research

Dr. Elizabeth Kauric

Most practitioners prefer to read clinical research because it can be readily applied to practice. Unfortunately, research in basic science seems to be written for other researchers. It takes a lot of effort to extract anything relevant from dry randomized, controlled trials, so the valuable information often gets passed around a circle of scientists and never makes it to the clinicians. Wouldn’t it be great if authors wrote an extra paragraph or two just for us, sharing their ideas on how their findings might influence our day-to-day practice without requiring us to be visionaries? Hey, we are busy treating patients, talk to us! We want the inside scoop! What does all the cool stuff you are doing in your crisp white lab coats mean for us in our practices?

The purpose of this article is to take a sample of acupuncture (AP) research and provide commentary on how it is original and applicable to the clinical setting.

#1 – Functional MRI Brain Mapping

This paper explored the neuronal correlates of the AP sensation provoked by needle stimulation. The design coupled real-time psychophysical ratings with fMRI scans to identify whole-brain neuronal responses. This type of design is termed percept-related fMRI, and had not been applied to AP research prior to this study.

The hypothesis predicted differences in subject brain responses between needle AP and non-insertive sham of PC-6. AP sensations were more varied, complex, and longer-lasting than sham responses after cessation of stimulation. Brain activation was noted in the sensorimotor cortex and cognitive regions, as well as deactivation in the default mode network (DMN) for both the AP and sham subjects. The AP group had higher activation in emotional and cognitive brain regions of the prefrontal cortex. The results suggested that the cognitive processing required by the needle induced more complex sensations which enhanced body awareness. This state may be an element of the analgesic effects of AP in the anti-nociceptive network.

#2 – Brainstem Responses

Most AP models have explored the role of the brainstem and autonomic responses using animals. This work was amongst the earliest research studies to explore changes in cortical and brainstem responses to AP over time using fMRI in humans. Electroacupuncture (EA) and sham stimulation of ST-36 were compared. EA induced brainstem activations (periaqueductal grey, substantia nigra, and superior colliculus) and deactivations (nucleus raphe magnus, nucleus tractus solitarius, parabrachial nucleus, nucleus cuneiformis, and inferior colliculus). No significant changes in brainstem activity were observed in the sham patients.

This evidence suggested that EA may modulate brainstem regions that influence opioid and non-opioid monoaminergic systems. Decreasing brain responses were observed over a prolonged period of stimulation by both EA and sham, indicating habituation. The exception to this was the limbic system, where EA produced increasing then decreasing activation, indicating a time-variant response. The results of this study support the use of fMRI in the evaluation of the human brainstem responses to AP stimulation.

Continued on page 4

Quick Reference

AP Acupuncture. Stimulation of soft tissues using thin needles.
DMN Default mode network. Network of brain regions active during inattention or wakeful rest.
EA Electroacupuncture. Application of electrical current to AP needles.
fMRI Functional magnetic resonance imaging. Mapping technique that measures changes in blood flow produced by neural activity in the brain.
MEG Magnetoencephalography. Mapping technique that measures magnetic fields produced by electrical activity in the brain.
SSC Somatosensory cortex. Diffuse areas of the brain involved with processing sensory stimuli.
SI Primary somatosensory cortex. Cortical region on the surface of the parietal lobe responsible for initial mapping and processing of sensory input (sensory homunculus).

Non-Acute Inversion Ankle Sprains

Heather MacKay

**Technique:** Two needles with GB-40.

**Purpose:** Treatment of non-acute inversion ankle sprains and altered ankle proprioception.

**Test:** Dorsi-flexion strength or ankle proprioception before and after this technique as an outcome measure.

**Acupuncture Point:** GB-40 (sinus tarsi, intra-articular).

**Method:** Insert two acupuncture needles close on the skin surface and aiming deep into the joint toward the same tender point.

**Stimulation:** Electrically stimulate the two needles with 10–15 Hz for 8–10 minutes. You can also manually stimulate a single needle for approximately 1 minute.

**Retest:** Outcome measures should demonstrate a clinically significant change.
#3 – Space-time Brain Mapping

Magnetoecephalography (MEG) is an imaging technique with high temporal resolution compared to fMRI. MEG provides non-invasive, direct measurements (location and timing) of cortical neural activity in response to somatosensory stimulation. This study was the first to evaluate MEG brain responses to low frequency EA versus sham stimulation of PC-6. Analysis yielded evidence that both stimuli were mapped to the contralateral somatosensory cortex (SSC) in area S1. EA responses peaked earlier than the sham stimuli and were localized more inferiorly in S1. The differences observed between these two stimuli may have been related to the fibre types. Physical properties of nerve fibres determine electrical and mechanical afference. MEG may be employed to non-invasively evaluate the human somatosensory responses to EA stimulation.

#4 – Resting State Brain Modulation

Neurons in the brain process information such as memory, pain, and emotion using anatomical and functional relationships. The spatiotemporal scale and underlying mechanisms of this processing are poorly understood, but fMRI has allowed researchers to examine the operational design underlying large scale brain networks. The DMN and SSC have been shown to be active during inattentional states. This study evaluated the functional connectivity of the DMN and SSC using resting state fMRI before and after needling and sham stimulation of PC-6. Heart rate variability, used to assess parasympathetic / sympathetic tone, was also measured. AP, but not sham, increased the resting state connectivity in pain-, affective-, and memory-related brain regions. DMN connectivity was positively correlated with parasympathetic activity in the AP group. Sensorimotor connectivity was also increased in pain-related regions. This data reveals that AP stimulation expands the connectivity of the DMN and SSC in the resting state. These connectivity changes and autonomic responses may serve as therapeutic mechanisms in AP stimulation.

#5 – Brain Plasticity in CTS Treatment

Dynamic cortical neuroplasticity in response to peripheral deafferentation and intervention has been examined in animal models. This was the first study to use fMRI in humans with a peripheral neuropathy, carpal tunnel syndrome (CTS), in response to a brief course of AP treatment. CTS patients were screened for clinical measures in CTS patients. The abnormalities were improved. AP treatment and clinical measures in CTS patients were improved. AP treatment induced beneficial cortical neuroplastic responses and clinical measures in CTS patients.

References


The Mind Behind the Research

All the research in this article was produced through an academic collaboration between Dr. Norman Kettner and the Athinoula A. Martinos Center for Biomedical Imaging of Massachusetts General Hospital, the main teaching hospital of Harvard Medical School. Dr. Kettner is a Professor and Chair of the Department of Radiology at Logan College of Chiropractic in Chesterfield, Missouri. He is a dual Diplomate of the American Chiropractic Board of Radiology and the College Board of Chiropractic Neurology. In addition to authoring numerous publications in the field of chiropractic radiology and functional neuroimaging, he has served as reviewer for the NIH / NCCAM and for several peer-reviewed journals. He has provided lectures on Complementary and Alternative Health Care to audiences including Saint Louis University School of Medicine, Washington University School of Medicine, and Walter Reed Army Hospital. Numerous awards of excellence in education have been presented to Dr. Kettner throughout his career, and in 2008 he was given the Researcher of the Year Award by the American Chiropractic Association. Dr. Kettner’s research interests focus on the use of fMRI to explore the neural mechanisms underlying acupuncture techniques.
This conference will be provided in conjunction with McMaster University Continuing Health Sciences Education. Negotiations are currently under way to hold the symposium at Queens Landing in Niagara-on-the-Lake, but we will keep you updated as plans evolve.

Save the Date:
International Symposium

Dr. Ravinder Ohson

The dates for the CCAA’s upcoming international symposium called “Contemporary Acupuncture Integration in Today’s Health Care” have been set! Please mark your calendars for April 26-29, 2012. Some of the greatest minds in the western acupuncture research community will come together from all over the world for this exciting event. You will not want to miss it!

This conference will be provided in conjunction with McMaster University Continuing Health Sciences Education. Negotiations are currently under way to hold the symposium at Queens Landing in Niagara-on-the-Lake, but we will keep you updated as plans evolve.

Questions or comments? acupoint.ccaa@gmail.com