Abstracts and Commentaries on Key Articles in the Literature

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Remote sampling mass spectrometry for dry samples: sheath-flow probe electrospray ionization (PESI) using a gel-loading tip inserted with an acupuncture needle.

Usmanov DT, Ashurov KB, Ninomiya S, et al. *Rapid Commun Mass Spectrom.* 2018;15;32(5):407–413.

PROBE ELECTROSPRAY IONIZATION (PESI) is only applicable to liquid or wet samples. In this study, researchers from Japan and Uzbekistan developed a sheath-flow PESI method for remote sampling mass spectrometry that can be applied to dry samples. An acupuncture needle (0.12-mm outer diameter, 700-nm tip diameter) was inserted into a gel-loading tip with a 0.1-mm protrusion out of the tip. Analytes were extracted by filling the latter tip with solvent and touching the sample surface softly for a short time (< 1 second). A high voltage was applied to the acupuncture needle, and mass spectra of analytes were obtained by a self-aspirating electrospray. Usmanov et al. stated that dry samples—such as lines of ball-point pen ink on paper, pharmaceutical tablets, instant coffee, brown rice, and narcotics—produced strong ion signals. The sample carryover was negligible. The sequential electrospray was observed to be similar to conventional PESI. The limits of detection for morphine and rhodamine B were found to be of the order of picograms. The researchers concluded that sheath-flow PESI is a promising technique for on-site and nondestructive profile analysis of dry samples with bulky and complicated shapes, with a spatial resolution of ~0.3 mm.

Reducing anxiety and improving engagement in health care providers through an auricular acupuncture intervention.

Buchanan TM, Reilly PM, Vafides C, Dykes P. *Dimens Crit Care Nurs.* 2018;37(2):87–96.

STRESS AND ANXIETY ARE EXPERIENCED by health care providers as a consequence of caregiving and can result in physical, emotional, and psychologic outcomes that have a negative impact on work engagement.

Buchanan et al. wanted to determine if auricular acupuncture can reduce provider anxiety and improve work engage-

ment. The study participants received 5 auricular acupuncture sessions within a 16-week period, utilizing the National Acupuncture Detoxification Association protocol for treating emotional trauma. Each participant completed the State-Trait Anxiety Inventory (STAI) and the Utrecht Work Engagement Scale (UWES-9) prior to the first session and again after the fifth treatment. The researchers stated that significant reductions were found in state and trait anxiety (STAI), as well as significant increases in the overall scores on the UWES, compared with baseline. Only the dedication subcategory of the UWES showed significant improvement.

In conclusion engagement has been linked to increased productivity and well-being and improved patient and organizational outcomes. Providing effective strategies, such as auricular acupuncture, to support health care providers for reducing anxiety in the workplace may improve work engagement.

Inpatient acupuncture at a major cancer center.

Garcia MK, Cohen L, Spano M, et al. *Integr Cancer Ther.* 2018;17(1):148–152.

RESearchers from the University of Texas MD Anderson Cancer Center, Houston, TX, performed this study. The use of complementary and integrative therapies is increasing among patients who have cancer, but data regarding the impact treatments such as acupuncture have in an inpatient oncology setting are limited. Patients who received acupuncture in an inpatient hospital environment between December 2014 and December 2015 were asked to complete a modified Edmonton Symptom Assessment Scale (ESAS; 0–10 scale) before and after each visit. Pre- and post-treatment scores were examined for each symptom using paired *t*-tests.

A total of 172 inpatients were treated with acupuncture in their hospital beds (257 visits). Thirty percent ($n=51$) received at least one additional follow-up treatment (mean visits/patient=1.5). The completion rate of the modified ESAS after acupuncture was 42%. The most common reasons for not completing the post-treatment ESAS were “patient too drowsy” or “patient fell asleep” (72%). In patients who reported a baseline symptom score ≥ 1 , the

greatest improvements (mean change $\pm$ standard deviation) after acupuncture on the initial visit were found for pain (-1.8 ± 2.2 ; $n=69$; $P<0.0001$), nausea (-1.2 ± 1.9 ; $n=30$; $P<0.001$), anxiety (-0.8 ± 1.8 ; $n=36$; $P=0.01$), drowsiness (-0.6 ± 1.8 ; $n=57$; $P=0.02$), and fatigue (-0.4 ± 1.1 ; $n=67$; $P=0.008$). In patients who received at least one follow-up visit, significant improvement from baseline was found for sleep disturbance (-2.5 ± 4.4 ; $n=17$; $P=0.03$), anxiety (-2.4 ± 1.7 ; $n=9$; $P=0.002$), pain (-2.3 ± 2.7 ; $n=20$; $P=0.001$), and drowsiness (-2.0 ± 2.6 ; $n=16$; $P=0.008$). The researchers concluded that patients who received inpatient acupuncture at a major cancer center experienced significant improvements after treatment for pain, sleep disturbance, anxiety, drowsiness, nausea, and fatigue.

“It’s better in a group anyway”: patient experiences of group and individual acupuncture.

Chuang E, Hashai N, Buonora M, Gabison J, Kligler B, McKee MD. *J Altern Complement Med.* 2018;February 15:e-pub ahead of print.

CHRONIC PAIN IS PREVALENT, BURDENSOME, AND COSTLY, and there are ethnic and racial disparities in treatment. Acupuncture is effective and safe, but access is limited. Group acupuncture can decrease cost and increase capacity by decreasing clinic space needs and increasing patient volume per acupuncturist; however, the effectiveness and patient acceptability of group- and individual-session acupuncture have never been compared directly.

The Acupuncture Approaches to Decrease Disparities in Pain Treatment (AADOPT-2) study was a randomized comparative effectiveness trial of acupuncture for chronic pain. Semi-structured indepth interviews were conducted with a subset of patients enrolled in the trial. Qualitative interviews were conducted with 46 patients from outpatient clinics in an urban, low-income area serving a primarily black and Hispanic population. There were 23 patients in each arm of the AADOPT-2 study. Patients were randomized to receive either individual acupuncture or acupuncture delivered in a small group. Transcripts of the interviews were analyzed, using an inductive thematic framework to explore and compare the patient experience in group and individual settings.

Patients in both study arms valued the pain relief, improved quality of life, and relaxation experienced during acupuncture. Privacy and mixed-sex groups were cited as a concern by a minority of patients; however, most of the patients who were randomized to the group setting noted that these concerns abated after initiating treatment. Differences between the study arms included the depth of the relationship with the acupuncturist and misgivings related to the treatment space. Group dynamics varied; some groups fostered a supportive, therapeutic interaction, while others were more reserved. Patients in both study arms valued their acupuncture experiences. Participants described both positive and negative aspects of the group setting.

Effect and safety of acupuncture for *Hwa-byung*, an anger syndrome: a study protocol of a randomized controlled pilot trial.

Lee HY, Kim JE, Kim M, et al. *Trials.* 2018;19(1):98.

THIS STUDY SHALL BE PERFORMED BY RESEARCHERS from different institutions in the Republic of Korea. *Hwa-byung* (HB) is an anger syndrome caused by an inadequate release of accumulated anger that leads to somatic and psychiatric symptoms. As HB results from long-term, inadequately treated negative emotions, its symptoms are complex, intractable, and concomitant with other psychiatric disorders. Therefore, studies aiming to develop effective and safe treatment options for HB are needed.

The authors plan to conduct a pilot study for a future, full-scale, randomized controlled trial of an optimal acupuncture procedure using semi-individualized acupuncture points in order to consider participants’ personal dispositions and types of emotional stress. This randomized, sham-controlled, participant- and assessor-blinded pilot trial will attempt to determine the study feasibility of acupuncture for HB and to explore this treatment’s clinical effects and safety. The clinical trial will be conducted with 2 groups: one treated with verum acupuncture and the other with sham acupuncture for 10 sessions over 4 weeks. The experimental group will receive semi-individualized acupuncture, whereas the control group will receive sham acupuncture, namely, minimal acupuncture on nonacupuncture points. The recruitment, compliance, and completion rate and clinical evaluations, including a visual analogue scale, the Korean version of the Beck Depression Inventory, the short form of the Stress Response Inventory, and the Instrument of the Oriental Medical Evaluation for HB, will be assessed to evaluate feasibility and possible effects and safety.

Four weeks after completing treatment, follow-up assessments will be performed. As this is a pilot study mainly for investigating trial feasibility, the results of this study will be analyzed descriptively and interpreted for the study purposes. Cohen’s d will be reported to determine the effect of acupuncture for HB and to enable comparisons with other treatment methods. This protocol is significant in that it provides optimal semi-individualized acupuncture treatment. We expect this study to yield information about the feasibility of this treatment and data about its possible effects and safety.

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