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Progress in Clinical Applications of Auricular Acupuncture at the International Symposium on Auriculotherapy Held in Singapore

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Abstract

An international gathering of world experts in the field of auricular acupuncture met in Singapore in August of 2017 to present the most recent research and clinical findings in this domain of alternative health care. Opening sessions summarized the neurophysiological research that has highlighted the importance of auricular portions of the vagus nerve in understanding the basis for both physiological and clinical benefits that have been observed with auriculotherapy. The alleviation of multiple medical symptoms by transcutaneous auricular vagus nerve stimulation was featured in several studies. Evaluation of recent journal articles in both China and in the West has provided continued support for the clinical benefits of auricular acupuncture. Randomized controlled trials have shown statistically significant improvements in chronic pain, osteoarthritis, post-stroke syndrome, and drug abuse disorders. Active ear points related to body pathology have been observed in newborn infants as well as adults. As such international symposiums often conclude, continued research to further evaluate the advanced application of auriculotherapy is an essential goal

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In August of 2017, the 9th International Symposium on Auriculotherapy was held in Singapore, South East Asia [1,2]. At this Singapore Symposium, there were 180 delegates and speakers from 23 countries throughout the world, included representatives from Singapore, Australia, Austria, China, France, Germany, Hong Kong, Hungary, Italy, Russia and the USA. The Hilarie Gilbert Foundation donated $10,000 for the top three research presentations amongst 54 lectures and workshops that examined the whole field of auriculotherapy and ear acupuncture.

From the University of Sassari, Italy, Franca Deriu, MD, PhD, established the neurobiological foundation for the auriculotherapy conference by her scholarly review of the neuroanatomical and neurochemical properties of the cranial nerves that innervate the auricle and the specific parts of the nervous system regions that interact with the external ear [3]. Multiple scientific studies have now shown that non-invasive, electrical stimulation of the auricular region corresponding to the vagus nerve could reproduce the same benefit of far more invasive, electrical stimulation of the actual vagus nerve, the 10th cranial nerve. Previous primate research had demonstrated that Vagal Nerve Stimulation (VNS) of the actual vagus nerve could activate limbic structures such as the hippocampus, the amygdala, the cingulate cortex, the insular cortex, and parts of the thalamus. Brainstem regions associated with the vagus nerve include the nucleus accumbens, the periaqueductal gray, the dorsal motor nucleus, and the nucleus of the solitari tract. VNS was shown to limit brain seizures and alleviate depressive mood to the same degree as antidepressant medications. A primary limitation, however, of direct vagal nerve stimulation is that it could impair cardiac function and there could be complications from surgery. Several fMRI studies in animals have now shown that noninvasive, transcutaneous electrical stimulation of the concha region of the auricle associated with the vagus nerve could activate changes in brain activity identical to direct stimulation of the vagus nerve. The transcutaneous auricular VNS (TA-VNS) were shown to have anticonvulsive, antidepressive and antinociceptive effects. Pain relieving results were also observed when transcutaneous electrical stimulation was applied to the areas of the auricle innovated by the trigeminal nerve.

Related to Dr. Franca Deriu's presentation, Drs. Yutian Yu and Peijing Rong from the Academy of Chinese Medical Sciences in Beijing, China, confirmed that gamma frequency, vagus nerve stimulation (VNS) could also be effective for the treatment of Alzheimer's Disease [4]. Transcutaneous, 40 Hz, electrical stimulation of the auricular concha, which somatotopically corresponds to the actual vagus nerve could significantly reduce the amyloid protein content of the brain, one of the prominent neurobiological features of Alzheimer's Disease, as well as reduce cognitive impairments related to this dementia disorder. Since transcutaneous auricular VNS (TA-VNS) can directly stimulate the brain via auricular portions of the vagus nerve, without surgery, one can thus avoid the risk of post-operative infections. Rong further demonstrated that transcutaneous auricular

VNS significantly alleviated symptoms of major depression. Additionally, Rong showed that transcutaneous auricular vagus nerve stimulation (TA-VNS) could significantly enhance the activity of pancreatic cells, which promoted the secretion of insulin, the up regulation of the expression of insulin receptors and greatly improve pancreatic glycometabolism [5,6]. TA-VNS was shown to be a promising, simple and cost-effective treatment for diabetic problems with insulin metabolism, and there was only minor risk of mild side-effects. Chinese delegate Shaoyuan Li demonstrated that TA-VNS elicited prominent antidepressive effects, as effective as direct Vagal Nerve Stimulation for the treatment of major depression [7]. In a separate study, utilizing fMRI, Dr. Li further showed that TA-VNS was associated with increased functional brain connectivity between the default mode neural network and the cutaneous somatic cortex and the orbital prefrontal cortex.

Auricular acupuncture research in the People's Republic of China during the past 10 years was summarized by Professor Baixiao Zhao from the Beijing University of Chinese Medicine (BUCM) [8]. Dr. Zhao conducted a systematic review of auricular acupuncture research on the diagnosis and treatment of auricular points from the years 2007 to 2016. In this literature search, the most frequent symptoms that were treated by auricular acupuncture, the most frequent diseases treated by auricular acupuncture, the qualitative of sophistication of the research, and the overall progress on auricular acupuncture research were summarized. Professor Liqung Zhou, also from the Beijing University of Chinese Medicine, examined auricular acupuncture points approved by the World Federation of Acupuncture-Moxibustion Societies and the European ear points utilized according to Paul Nogier and Frank Bahr [9]. Both similarities and differences between the Asian and European systems were delineated and Dr. Zhou highlighted the standardized nomenclature system utilized throughout China to identify the location of ear acupuncture points.

Randomized controlled trials on auriculotherapy were evaluated by several Asian presenters. Dr. Meng Xiaonan, from the Beijing University of Chinese Medicine, evaluated the clinical efficacy of auricular acupuncture for chronic pain and motor dysfunction observed in post-stroke patients [10]. The primary treatment group received auricular acupuncture as well as body acupuncture and rehabilitation, whereas the control treatment group was given body acupuncture and rehabilitation, but no auriculotherapy. Specific ear points included in the auricular acupuncture group included shoulder, wrist, fingers, subcortex and sympathetic. There was reduced in reported pain measured by the Visual Analog Scale (VAS) and improved range of arm movement; both differences were significantly greater in the group given auricular acupuncture and standard treatment compared to the group given only body acupuncture and rehabilitation. The therapeutic benefits for the auriculotherapy group remained significantly stronger for a longer period of time than for a group given sham needling of ear points or no application of needles inserted into the ear.

Hong Kong delegate Lorna Suen, RN, randomly divided elderly patients with osteoarthritic knee conditions into four groups [11]. One group was given auricular acupressure treated by both magnetic acupellets and auricular laser stimulation, another group given true ear magnet acupressure but only sham laser stimulation, still another group given true laser stimulation but sham magnet pellets, and a fourth group given both sham laser and sham magnetic treatment to the ear. Reduction in knee pain and improved range of motion of the knee was demonstrated for all three groups given at least one true auricular treatment, which was significantly greater than changes in the sham control group. Dr. Chao Li treated children less than 10 years old who were suffering from adenoid hypertrophy, which can lead to obstruction of the eustachian tube, sinusitis, rhinitis or bronchitis [12]. Dr. Li used auricular pressure applied with magnet ear beads at auricular points from both the Chinese and European auricular acupuncture systems, including ear points for the internal nose, pharynx, tonsils, lung, San Jiao, endocrine glands, adrenal gland and thymus gland. A randomized controlled study of auricular bloodletting for the treatment of acne was conducted by Yan Fen She from the Hebei College of Traditional Chinese Medicine [13]. The severity of skin damage related to acne was significantly lower in the experimental group given auricular blood-letting and auricular acupressure than that in the control group just given auricular acupressure; no adverse reactions were observed in any of the acne patients in either group.

Singapore acupuncturist R. Lim noted that although acupuncture is now common practice in China, Europe, the USA and many parts of the world, it is still not popular due to needle phobia. Lim set out to help patients overcome this fear by using a comfortable laser light modality. Laser light was applied to a combination of auricular acupuncture points and body meridians points. Depending upon whether the client was right or left handed, the opposite ear was used. The auriculotherapy points selected were shen men, heart, lung, endocrine, brain, adrenal, stomach, liver, kidney and finger. The body meridians points used were lung, pericardium, heart, kidney, large intestine, stomach, spleen, ren and du.

Each client received 7 sessions.

- By the 2nd session, most patients said that their smoking cravings had been noticeably reduced.
- After the 3rd session, most patients reported that they no longer finished the cigarette that they had smoked, as the taste was now awful.
- More than 80% of the patients did not smoke at all by the 4th sessions. Nevertheless, the bottom line regarding quitting smoking was the individual's intention to kick the bad habits. Once they had that focus, the chances of success could always be assured with laser auriculotherapy treatment.

One of the most intriguing presentations at the Singapore auriculotherapy symposium was from Latin America. Acupuncturists Alexandre Yoshizumi and Fabiola Luz from São Paulo, Brazil and Dr. Daniel Asis from Santa Fé, Argentina, presented their rather remarkable work on auricular chromo

therapy for the alleviation of psychological trauma and PTSD [14]. Chromo therapy is the treatment of several different pathologies using the interaction of specific electromagnetic wavelengths with biological systems. The effect of laser light and the use of a simple, yellow, felt-tip pen was applied to auricular regions representing the Hippocampus, the Amygdala, and areas of the ear lobe associated with 'Psychic Emotional Scars'. In the previously established Dr. Asis. Chromo therapy procedure, a patient was asked to close their eyes and remember the most terrible images of an emotionally traumatic event. After that, the patient was asked to tell which emotion accompanied the image and describe the intensity of this emotional perturbation on a scale of 0 to 10. Sensitive auricular points were then detected using a pressure probe or using electronic detection. These reactive ear points were next treated with a yellow colored, felt-tip pen and the patient were the asked to maintain the traumatic image in their mind. Facial expressions, respiration and body gestures were then observed. Of 149 patients, 93% reported that the traumatic image and the emotional pain connected with it were erased completely or almost completely.

European presentations at the international auriculotherapy symposium focused upon the clinical studies of the French physician Paul Nogier, who was the first Western physician to demonstrate that all body organs are represented as reflex zones on the external ear when there is pathology in the corresponding area of the body [15]. Jasmin Stadler, MD, of the Medical University of Graz, Austria, conducted a blinded, controlled, observational trial examining active ear acupuncture points in sick and healthy neonates as compared to active ear points adult patients [16]. A blinded, observational trial was conducted to locate active ear acupuncture points in healthy and sick neonates. Ear reflex points were detected on both ears by an electrical point search device. Of 63 term and late-preterm neonates, 37 were identified as sick and 26 were identified as healthy. Active ear acupuncture points were detected significantly more often in the sick neonates. Furthermore, the older the neonates were at the time of the investigation, the more ear points were detectable. Professor Wolfgang Raith, also from the Medical University of Graz, Austria, examined active somatic and psychic ear acupuncture points in newborn infants with Neonatal Abstinence Syndrome (NAS) related to substance abuse by their mothers during pregnancy [17]. Of 31 newborn infants identified with NAS, active ear acupuncture points were found in all of them. The psycho vegetative rim of the auricle was the most common active somatic area. The most frequently found psychic points were the European Frustration point on the upper tragus and the Psychotherapeutic R Point found where the helix root meets the face. One infant who did not develop signs of NAS also had no detectable active psychic ear acupuncture points [18].

A randomized, placebo-controlled, double blind research by Dr. Istvan Szechenyi of Hungary investigated the internationally recognized five-point, National Acupuncture Detoxification Association (NADA) protocol developed by Dr. Michael Smith and the five-point, Battlefield Acupuncture (BFA) protocol developed by Dr. Richard Niemtzow, both from the USA [19,20,21]. The purpose of this investigation was to evaluate whether it makes any difference which ear points were stimulated or is either treatment only a placebo effect. Randomized, double-blind, placebo control studies, compared NADA points and placebo points in 44 persons, and compared BFA points and placebo points in 110 persons in a second study. Auricular acupuncture treatment in this study showed significantly higher stress-reducing effect in the NADA group than in the Battlefield Acupuncture group.

Dr. Kelly Armstrong from the USA provided a detailed, comparative analysis of the effects of DC micro current point stimulation on the autonomic nervous system, when applied to Battlefield Acupuncture (BFA) [22]. A total of 8 patients with a history of chronic pain were evaluated for symptom reduction before and after micro current auriculotherapy stimulation or a sham treatment. Micro current Point stimulation led to a statistically significant, pre-score to post-score improvement in 7 of 29 markers collected: VAS pain scores were reduced 63%, HF-Vagal Tone improved 56%, Parasympathetic activity improved 38% and PTGi-Cardiac marker improved 48%. The positive results in this study could will help establish the validity of the BFA protocol for other pathologies which can be impacted by the sympathetic nervous system activation on the body.

An impressive presentation from Dr. Arnyce Pock of the USA described the outcomes of a 5.4 million dollar grant from U.S. [23]. Department of Defense to evaluate the training of medical personal learning Battlefield Acupuncture (BFA). This multi-disciplinary, multi-site teaching programs was designed to facilitate the effective implementation of the BFA techniques at 26 different medical and veteran facilities in U.S. Clinical application of BFA was taught to nearly 3000 medical personnel over an 8 month period; less than 1% of these physicians, nurses and medical technicians had any prior training in acupuncture. BFA is an effective technique that can be used for the amelioration of acute or chronic pain in a wide variety of clinical settings and can be easily taught to a wide range of health professionals, including those with no prior training in auriculotherapy.

Conclusion

The presenters for this international symposium on auriculotherapy came from Asia, Austrailia, Europe and the USA, each with intriguing demonstrations of the physiological understanding and clinical application of this alternative health care modality. Application of stimulating a portion of the vagus nerve through its auricular branch, rather than through surgical dissection of the vagus nerve itself, was shown to have multiple health care benefits. Access to research journals in China complemented the value of auricular acupuncture procedures that has also been described in Western journals. Several randomized controlled trials in various Asian countries demonstrated statistically significant benefits following auriculotherapy used to treat chronic pain, osteoarthritis, post-stroke pathology, depression and Alzheimer's Disease. Ear acupoints were treated with needles, but also with laser light and even with a yellow felt tip pen. Children as well as adults were found to have active ear reflex points that related to body pathology. Differences between

the values of auricular acupuncture utilizing the NADA protocol versus the Battlefield Acupuncture protocol will require much further research.

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