In this issue of the journal, recommended articles are selected from the *Korean Journal of Acupuncture* (ISSN: 1229-7933) and from the *Journal of Pharmacopuncture* (ISSN: 1226-4849), which were published in the Korean language.


**Development & Evaluation of a 12-channels Multi-Frequency Acupuncture Point Impedance Measurement System**

Soo-Byeong Kim, Jae-Woo Lee, Seung-Wook Lee, Na-Ra Lee, Young-Dae Kim, Tae-Min Shin, Yong-Heum Lee

**Abstract**

Objectives: The object of this study is to evaluate and develop a system that reflects the electrical properties of acupoints by using the multi-frequency SPAC (single power alternating current) stimulation method based on the BIA (bioelectrical impedance method).

Methods: A 12-channel meridian impedance measurement system (MIMS) that used multiple frequencies in 10 steps (1–10 KHZ) was designed. To check the electrical properties of acupoints, we measured the impedances of 11 acupoints selected from the LU and the ST meridians.

Results: Regarding the distribution of measurement values by frequency, we found that the lowest response commonly occurred at 1 KHZ, but the frequency bands representing the highest response varied with the acupoint. The measured values and a function of frequency showed similar distributions for the 11 acupoints (P < 0.05). Also, the same frequency band showed the highest responses at left/right equal acupoints (P < 0.05).

Conclusion: Through changes in the electrical properties of acupoints due to multi-frequency stimulation, we can check the diagnostic possibilities of oriental medicine by using the 12-channel MIMS developed in this study. With this system, we will be able to conduct various clinical studies of oriental medicine diagnosis.

Key Words: BIA; SPAC; multi-frequency; impedance; meridian and acupoint; LU; ST

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**Comparative Study of Speed, Size and Depth of Pulse on the Traditional Pulse Diagnosis and Pulse Analyzer**

In-Young Ha, Yeo-Chung Youn, Dae-Hwan Youn, Chan-Hun Choi, Young-Su Lee, Seung-II, Chang-Su Na

**Abstract**

Objectives: Pulse diagnosis is an important method in oriental medicine. The aim of this study is to measure the similarity between a diagnosis by using the traditional method in which a doctor feels the patient’s pulse, and a diagnosis by using an apparatus such as a Hwang-Je (HJ) pulse analyzer or a Hui-Su (HS) pulse analyzer on Chon, Kwan and Chuk.

Methods: Four Korean medical doctors measured and a HJ pulse analyzer and a HS pulse analyzer were used to measure the speed (遼數), the size (微細弱緩大), and the depth (浮沈) of pulse waves of 23 volunteers. First, four Korean medical doctors measured the pulse waves of the volunteers. Then, the pulse waves of the volunteers were measured by using a HJ pulse analyzer and a HS pulse analyzer. The measurements were performed on the right Chon, Kwan and Chuk.

Results: The traditional method and the HJ pulse analyzer method had 60.9% matches on the values of the pulse speed, whereas the traditional method and the HS pulse analyzer method had 78.3% matches. The traditional method and the HJ pulse analyzer method had 56.5% (Chon), 65.2% (Kwan), 78.3% (Chuk) matches on the values of the pulse size, whereas the traditional method on the HS pulse analyzer method had 65.2% (Chon), 13.0% (Kwan), 39.1% (Chuk) matches. The traditional method and the HJ pulse analyzer method had 43.5% (Chon), 26.1% (Kwan), 47.8% (Chuk)
matches on the values of the pulse depth, whereas the traditional method and the HS pulse analyzer method had 45.5% (Chon), 30.4% (Kwan), 36.8% (Chuk) matches.

**Conclusion:** Based on these results, we suggest that the pulse analyzer should be developed because pulse diagnoses using pulse analyzer are remarked similar to pulse diagnoses based on the tradition method.

**Key Words:** pulse analyzer; traditional pulse diagnosis; pulse speed; pulse size; pulse depth


**Histological Comparison Study of Primo Nodes and Immature Liver Tissue on the Liver Surface in Rats**

Yeon-Hee Ryu, Sung-Won Lee, Sung-Yeoun Hwang, Min-Su Kim, Hyo-Geong Ban, Sun-Mi Choi, Jae-Hyo Kim, In-Chul Sohn, Seong-Hun Ahn

**Abstract**

**Purpose:** This study was carried out to compare a primo node with immature liver tissue in terms of the characteristic features of the tissue.

**Methods:** After a hepatectomy was conducted on rats, we applied methods such as H&E, Oil red O, Masson trichrome and van Gieson staining to compare primo nodes to similar immature liver tissue on the liver surface.

**Results:** The following results were obtained:
1. H&E staining which is investigate the characteristic features of tissue showed many small sinuses in the primo node, but no red corpuscles on blood vessels. The findings were the opposite for immature liver tissue, in which blood vessel and red corpuscles were found.
2. Oil red O staining for traces of fat showed no fat in the primo node, but fat was found in immature liver tissue.
3. Masson trichrome and van Gieson staining showed a small amount of collagen fiber in the primo node, but no elastic collagen fiber. No collagen fiber and no elastic collagen fiber were found in immature liver tissue.

**Conclusion:** The research suggests that a primo node is different from liver tissue. The small amount of collagen fiber provides an explanation for the irregular forms of primo nodes. This finding should be valuable for further research on the characteristic features of primo nodes.

**Key Words:** primo node; immature liver tissue; oil red O staining; Masson trichrome staining, van Gieson staining


**Effect of Dong Shi Acupuncture Therapy on the Relief of Premenstrual Syndrome and Dysmenorrhea in Female College Students**

Gyeong-Cheol Kim, Yi-Soon Kim, Yi-Sub Kwak, Han-Joo Yang

**Abstract**

**Objectives:** This study was conducted to determine the effects of magnetic therapy on the relief of premenstrual syndrome and dysmenorrhea among female college students.

**Methods:** Twenty female college students in a university were selected as the experimental group. All of the subjects had a score of more than 6 on the visual analogue scale for measuring the level of premenstrual pain. The data were collected by using questionnaires. Magnetic therapy was administered on the Dong Shi acupuncture therapy extra points (婦科, 還巢, 木婦, 門金) for the subjects in the experimental group.

**Results:** The results were as follows: The experimental group who received magnetic therapy on the Dong Shi Acupuncture extra pointed showed decreased premenstrual syndrome. In addition, the experimental group who received magnetic therapy on the Dong Shi Acupuncture extra points showed decreased dysmenorrhea.

**Conclusion:** As a result of this study, magnetic therapy on the Dong Shi Acupuncture extra points can be used as self-care therapy to improve the symptoms of females with premenstrual syndrome and dysmenorrhea.

**Key Words:** magnetic therapy; Dong Shi acupuncture; premenstrual syndromes; dysmenorrhea
**Literature Study on the Conformation and the Application of Nine Classical Needles**

In-Chul Sohn, O-Sang Kwon, Yu-Lee Kim, Sung-Hun Ahn, Jae-Hyo Kim

**Abstract**

**Objectives:** Nine classical needles have been recorded in oriental medical classics as diversified instruments for acupuncture to treat patients with various symptoms. Recently, the suggestions were made that doctors did not make full use of acupuncture and that poor understanding of the nine needles caused a lack of usage.

**Methods:** A bibliographical study of the conformation, including length & shape, and the application and usage of the nine classical needles presented in oriental medical classics was conducted.

**Results:** Chamchim (shear needle) is 1.6-chon (寸) long with a sharp tip and is used to treat fever in the head and trunk. Wonchim (round-pointed needle) is 1.6 chon long with, an egg-shaped tip and is used to treat diseases of flesh through massage. Sichim (spoon needle) is 3.5 chon long with a thick body and a round, sharp tip and is used to treat weakness of Qi. Bongchim (lance needle) is 1.6-chon long with a triangular tip and is used to treat chronic diseases with bleeding. Pichim (stiletto needle) is 4-chon long and is razor sharp; it is used for surgery of large amounts of big pus. Wonlichim (rounded-sharp needle) has 1.6-chon long, thin body with a sharp tip and is used to treat acute arthralgia syndromes. Hochim (filiform needle) has various lengths and is used to treat various disease of meridians and organs. Jangchim (long needle) is 7-chon long with a sharp tip and is used to treat chronic arthralgia syndromes in deeper places of the body. Daechim (large needle) is 4-chon long with a nail- like tip and is used to induce the excretion of artheredema from joints.

**Conclusions:** The conformations of the nine classical needles have changed from those recorded in oriental medical classics. However, the usage of the nine classical needles has remained the same. Therefore, the intrinsic attributes of the nine needles are thought to have been preserved even though the conformations of the nine classical needles have changed.

**Key Words:** nine classical needles; acupuncture; conformation; application

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**Study of a Four-week Repeated-dose Toxic Test of Sweet Bee Venom in Rats**

Hae-Yon Kwon, Ki-Rok Kwon

**Abstract**

**Objectives:** This study was performed to analyze the four-week repeated-dose toxicity of sweet bee venom (SBV-pure melittin, the major component of honey bee venom) in rats.

**Methods:** All experiments were conducted at Biotoxtech Company, a non-clinical study authorized institution, under the regulations of Good Laboratory Practice (GLP). Male and female 5-week-old rats were chosen for the pilot study of four-week repeated-dose toxicity and were injected at a level of 0.56 mg/kg body weight (the high dose experimental group: eighty times higher than clinical dosage), a level of 0.28 mg/kg body weight (the medium-dose experimental group) or 0.14 mg/kg body weight (the low-dose experimental group). Equal amounts of normal saline were injected into the rats in the control group every day for four weeks.

**Results:** The results of this study are as follows:

1. No mortality occurred in any of the experimented groups.
2. The side effects, such as hyperemia and movement disorder, were observed around the area of injection in all experimental groups. The higher the dose in treatment, the higher the incidence of side effects.
3. Concerning weight measurements, neither the male nor the female group showed significant changes compared to the control group.
4. Concerning CBC and biochemistry, all experimental groups showed no significant changes compared to the control group.
5. Concerning weight measurements of organs, the experimented groups showed no significant changes compared to the control group.
6. To verify abnormalities of organs and tissues, the cerebellum, cerebrum, liver, lung, kidney, and spinal cords were removed, and histological observations with H-E staining were conducted. Concerning the histological observation of liver tissues, some fatty changes were observed around the portal vein in the 0.56-mg/kg experimental group, but no abnormalities were detected in other organ.
7. The proper high dosage of SBV for a thirteen-week repeated test in rats may be 0.28 mg/kg at one time.

**Conclusions:** The above findings suggest that SBV is a relatively safe treatment medium. Further studies on the subject should be conducted to yield more concrete evidence.

**Key Words:** sweet bee venom; melittin; four-week repeated-dose toxicity
Study on the toxicity and the biological activity of Aconiti Ciliare Tuber Pharmacopuncture in Rats
Sungchul Kim, Seong-Hum Ahn, Sungha Kim, Sangkwan Lee, Bong-Keun Song

Abstract
Objectives: We investigate both the toxicity of Aconiti ciliare tuber pharmacopuncture and the antioxidant activity of Aconiti ciliare tuber Pharmacopuncture to develop a safe Aconiti ciliare tuber pharmacopuncture and to establish its effect.
Methods: In order to investigate the toxicity of the Aconiti ciliare tuber, we administered Aconiti ciliare tuber orally to rats and compared the survival rate with that of rats that had been administered radix aconitum simmered with semen glycyrrhizeae and radix glycyrrhizae. We examined the in-vitro biological activity of Aconiti ciliare tuber pharmacopuncture, including the total polyphenol content and the 2,2’-azinobis-3-ethylbenzothiazoline-6-sulfonic acid radical decolorization (ABTS) radical scavenging.
Results and Conclusions: The LD50 of Radix aconitum simmered with Semen Glycine and Radix Glycyrrhizae was 9.0 g/kg; on the other hand, the LD50 of Aconiti ciliare tuber was more than 15 g/kg. The total polyphenol content of the Aconiti ciliare tuber pharmacopuncture was 2.31 mg/L. The ABTS was 10.26%. We conclude that the Aconiti ciliare tuber is not highly toxic and that the LD50 of Aconiti ciliare tuber pharmacopuncture has a little antioxidant effect.
Key Words: aconiti ciliare tuber; pharmacopuncture; toxicity test; antioxidant activity; biological activity

Effect on Pulse-wave Factors in Middle-Aged Women of Mountain Cultivated Ginseng Pharmacopuncture
Sang Wook Park, Yi Soon Kim, Won Deok Hwang, Gyeong Cheol Kim

Abstract
Objectives: The aim of this research is to determine the effect of Mountain-Cultivated Ginseng Pharmacopuncture on the pulse-wave factors in middle-aged women.
Methods: First, 20 middle-aged women were diagnosed using pulse diagnosis; then mountain-cultivated ginseng pharmacopuncture (1 injection, 20 cc) was injected. Thirty minutes later, pulse diagnosis was again performed. The method of a one-group pretest-posttest design was used for evaluation.
Results: The total pulse cycle time T was statistically increased on both the left and the right chon, kwan, and cheok. The T4 time was statistically increased on both left and right kwan, kwan, and cheok. The (T4-T1)/T indices, except the left cheokmaek, and the right cheokmaek observation areas, decreased significantly in four sites. Wm (indicating the high-pressure retention time) indices, except right chon maek, increased significantly in the five sites observed.
Conclusion: The effect on the pulse-wave factors in middle-aged women of mountain-cultivated ginseng pharmacopuncture was to increase the T, T4, and Wm indices and to decrease the (T4-T1)/T index. The results of this experiment showed that mountain-cultivated ginseng pharmacopuncture increased the pulse-wave’s stability and strength.
Key Words: mountain-cultivated ginseng pharmacopuncture; pulse-wave factors; pulse diagnosis

Effects of Sipgeondaebo-tang Pharmacopuncture Extracts on the Collagenase Activity and the Procollagen Synthesis in HS68 Human Fibroblasts and Tyrosinase Activity
Sena Lee, Myung-Gyou Kim, Myoung-Hee Kim, Hyung-Jun Kim, Hak Jun Jo, Kang-Hyun Leem

Abstract
Objectives: This study was designed to investigate the collagen metabolism and tyrosinase activity of sipgeondaebo-tang pharmacopuncture extracts (SP).
Methods: The effect of SP on type I procollagen production and collagenase activity in human normal HS68 fibroblasts after UVB (312 nm) irradiation was measured by using the ELISA method. The tyrosinase activity after treatment of SP was measured as well.
Results: The increased collagenase activity after UVB damage was significantly decreased by using SP. The tyrosinase activity was significantly reduced as well. However, the L-DOPA oxidation was not changed.

Conclusion: SP showed anti-wrinkle effects and whitening effects in vitro. These results suggest that SP may be a potential pharmacopuncture for anti-aging pharmacopuncture treatment.

Key Words: sipgeondaebotang; shiquandabutang; pharmacopuncture extracts; type I procollagen; collagenase; tyrosinase


Effects of Yukmigeehwang-hwan Extracts on the Elastase Activity and on DPPH and NO Scavenging Activities

Sena Lee, Myung-Gyou Kim, Myoung-Hee Kim, Hyung-Jun Kim, Hak Jun Jo, Kang-Hyun Leem

Abstract

Objectives: Elastic fibers are found in the skin, lungs, arteries, veins and other structures. Elastases destroy the elastic fibers and cause emphysema and pulmonary hypertension. Oxidative stress is needed for these pathologic changes. Accordingly, the present study was designed to investigate both the effect of yukmigeehwang-hwan extracts (YHE) on the elastase activity and the anti-oxidative effects of YHE.

Methods: The inhibitory effects on elastase and the DPPH and the NO free-radical scavenging activities of YHE were measured.

Results: The elastase activity was significantly inhibited by YHE. YHE significantly scavenged DPPH and NO free radicals as well.

Conclusion: YHE showed elastase-inhibiting effects, as well as anti-oxidative activities, in vitro. These results suggest that YHE may have potential roles in the treatment of pulmonary emphysema and pulmonary hypertension.

Key Words: yukmigeehwang-hwan; liuweidihuang-wan; elastase; DPPH; NO