

expression of IL-6, TNF- α , MCP-1, TGF- β in the brain tissue of affected side.

Results: Electro-acupuncture treatment on DU20, affected side ST36, contrast the points DU20, EX-HN3 and DU26, could significantly lower the inflammatory response signals' expression levels in the brain tissue of affected side in the rat model, including IL-6, TNF- α , MCP-1, TGF- β , could show the second peak of IL-6, TGF- β in advance.

Conclusion: Electro-acupuncture treatment on DU20, affected side ST36, contrast the points DU20, EX-HN3 and DU26, had better influences in regulating the body's inflammatory stress response to injury, reducing the inflammatory response and inflammatory, activating repair function, combined use of points on the head and body may be better in reducing inflammatory injury than using the head acupuncture points only.

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OS02.06

Electroacupuncture modulates brain connectivity to alleviate osteoarthritis-associated pain in a rat model



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Purpose: Osteoarthritis (OA) of the knee is a major cause of pain. Treatment of such pain remain serious challenges. The aim of this study was to investigate effects and mechanisms of electroacupuncture (EA) on OA-caused pain in an OA rodent model produced by monosodium iodoacetate (MIA).

Methods: MIA (3 mg/50 μ l /rat) was injected into the knee joint cavity in both male and female rats. EA, 10 Hz, 2 mA, and 0.4 ms pulse width for 30 min, was applied bilaterally at the equivalent of the human acupoint GB30 once a day on days 2-9 post-MIA injection. Pain was assessed with a battery of tests including body weight bearing (BWB) differences, conditioned place preference (CPP), thermally and mechanically evoked withdrawal responses, and locomotion. Functional magnetic resonance imaging (fMRI) was used to study the effect of EA on brain network connectivity during the resting state after multiple EA treatments.

Results: Behavioral data shows 1) that EA treatment obviously decreased BWB differences on days 3-5 and 8-30 in male rats and on days 7-15 in female rats compared to control rats, suggesting a sex-dependent difference of EA effect on OA-induced pain, 2) that EA-treated rats showed CPP to the EA-paired chamber while the sham control group spent equal amounts of time in both chambers, 3) that EA inhibited mechanically and thermally evoked pain, and 4)

nucleus accumbens, whose activities are associated with patients' spontaneous pain, as a seed region, fMRI data shows an increased anterior cingulate cortex (ACC)/motor/sensory (M1/S1) connectivity in MIA-injected rats but not in naive or EA-treated rats. This suggests that MIA-induced pain affects connectivity between the nucleus accumbens and ACC/motor/sensory cortex and that EA treatment modulates OA-induced brain activity during the resting state.

Conclusion: EA may modulate specific brain connectivity to alleviate pain.

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OS03.01

A preliminary study on pulsographic parameters change caused by pain in patients with primary dysmenorrhea



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Purpose: To investigate the changes in pulsographic parameters caused by pain in patients with primary dysmenorrhea (PD).

Methods: A total of 30 PD patients whose pain reaching at least 5 cm of Visual Analogue Scale (VAS) were surveyed. Acupuncture was used in their period to relieve pain. Pulsograph and pain level were detected using electro-pulsography and VAS respectively at four time points, 7-10 days before period(T0), patients with obvious pain(VAS pain scores \geq 5) in period(T1), immediately after acupuncture(T2) and 30mins after acupuncture(T3). Time parameters (t) and amplitude parameters (h) corresponding to the dominant wave, pro-dicrotic wave and dicrotic wave of pulsograph to different pain level were analyzed. Moreover, normalized time parameters (normalized at heart rate of 75 times/ min) (t') were analyzed.

Results: Immediately after acupuncture treatment VAS pain scores had a reduction from 6.40 \pm 1.13 at T1 to 0.70 \pm 0.75 at T2 (P<0.001), and then slowly to 0.11 \pm 0.32 at T3 (P<0.001). As to changes in the original parameters and normalized-based time parameters (normalized at 75 times/min heart rate), compared with those at T0, w1 and h3 and h4 at T1 demonstrated significant increases (P<0.01), and t2 and t2' and t3' and h(d) showed significant reductions (P<0.01, 0.001, 0.05, 0.001). At T2, compared with those at T1, t1 and w1 and w2 and h2 and h3 and t1' and t4' significantly decreased (P<0.05, 0.01, 0.01, 0.001, 0.01, 0.001, 0.05), and h(d) significantly increased (P<0.001). There was no difference between T2 and T3.

Conclusion: There are changes in pulsographic parameters, basically in opposite trends, in patients with PD when their pain occurs and when it is relieved. Pulsographic parameters may serve as an objective indicator for pain. (supported by the 973 Program of 2011CB505105 and Natural Science Foundation of China, No.81473598.)

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OS03.02

A Diachronic Study on the Concepts of Jeokchwi(絡疾)-related Disease



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Purpose: To examine the process of change on the concepts of the 'Jeokchwi' and to investigate the process of change on categorization and classification system of these diseases.

Methods: Eighteen comprehensive medical books published between the third century and the eighteenth century were included. Lesion location, pathophysiology, and symptoms of the 'Jeokchwi' and its subordinate diseases were extracted from each book.

Results: The 'Jeokchwi' has been recognized since the third century. There has been little change on the concept of the 'Jeokchwi' until the Jin-Yuan Dynasties(金•元代). After Zhuzhenheng(朱震亨) reestablished the theory for etiology of the 'Jeokchwi', two pathophysiologic concept of this disease have coexisted since the Ming Dynasty(明代). Four criteria(lesion location, lesion mobility, mobility of painful areas, and existence of an obvious lesion border) which classified the 'Jeokchwi' into the 'Jeok'(絡) and the 'Chwi'(疾) in the 『Nanjing』(難經) have been used until the Ming-Qing Dynasties(明•清代). As Zhuzhenheng's theory for etiology of the 'Jeokchwi' also applied to the theory for etiology of the 'Jeok' and the 'Chwi', pathophysiologic concepts of these diseases reestablished. The 'Jeok of five viscera'(五臟之絡), which is a principal subordinated disease of the 'Jeok', is the collective disease for five diseases('Bigi'(肥氣), 'Bokryang'(伏氣), 'Bigi'(疝氣), 'Sikbun'(息飭), and 'Bundon'(奔豚)). Three criteria(lesion location, size or pattern of local lesion, mutated symptoms) in the 『Nanjing』, and two criteria in the 『Maijing』(脈經) for classifying the five diseases have been passed down until the Ming-Qing Dynasties. The concept of the 'Chwi' and the 'Six Chwi'(六疾) has been developed in detail than that of the 'Jeok' and the 'Jeok of five viscera'.

Conclusion: The pathophysiology and symptom of the 'Jeokchwi' were mostly recognized before the third century, and most of them have been passed down until the Ming-Qing Dynasty. Some concepts about this disease term changed through the process of creation, extinction, integration, or separation.

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Development of cost-effectiveness management tool for Korean Medicine hospitals in Korea



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Purpose: From the point of view that high medical cost does not guarantee high quality of medical care, we need measures to manage cost-effectiveness. In Korean Medicine hospitals, the elderly population is more than 70% of the patient composition and medical cost is increasing by 15% every year. However there is no measure developed to manage cost-effectiveness. We developed a Korean Diagnosis Related Group-Korean Medicine (KDRG-KM) in the area of Korean Medicine (hospitalization) to use as a tool to manage quality of medical care and to compare case-mix adjusted inter-hospital cost-effectiveness. The aim of this study is to assess clinical similarity and the homogeneity of resource use in the groups of KDRG-K M.

Methods: We used claims of 2012 data from Korean Medicine hospital that were submitted to HIRA (Health Insurance Review & Assessment Service). We performed T-test and F-test on occurrence frequency and average medical cost of disease, procedures, age and severity. The results were used as reference in the classification determination process, under the guidance of clinical specialist panel(including 8 specialist academic association).

Results: Based on KCD (Korean standard Classification of Diseases), diseases were categorized into 27 groups and procedures were divided into 11 groups with the standard of type of consultation(Korean Medicine hospitalization or other medical institution hospitalization) and type of procedures (acupuncture, moxibustion and cupping). In consideration of the fact that elderly patients are the majority, age is splitted up at 65-years-old, 80-years-old. Therefore, the final number of total groups is 234. KDRG-KM has 66.5% of R-squared (R) value.

Conclusion: The KDRG-KM could be used as inter-hospital comparison tool for improving the quality of medical care. It also makes it possible to use medical cost more efficiently by securing homogeneity of resource use. In particular, the introduction of age splits makes it more efficient to manage the medical cost and improve quality of medical care for the elderly.

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