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Journal of Integrative Medicine

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Conference Abstract

Abstracts for SAR/RCMI PolyU International Research Conference

May 23–25, 2024, the Hong Kong Polytechnic University, Hong Kong, China

ORAL ABSTRACTS

(Abstracts were arranged in an alphabetical order)

Abstract submission # 137

A Clinical Trial on Laser Moxibustion for Upper-limb Lymphedema of Breast CancerShanze Li¹, Jie Huang², Weikang Zhu³, Xiao Zheng³, Lizhen Wang¹
1. Shanghai University of Traditional Chinese Medicine, China
2. Fengcheng Hospital of Traditional Chinese Medicine, China
3. Shanghai Municipal Hospital of Traditional Chinese Medicine, China**Objective:** To evaluate the therapeutic effects of 10.6 μm CO₂ laser moxibustion on breast cancer-related lymphedema (BCRL).**Methods:** This randomized controlled trial was conducted from May 2021 to January 2023. Sixty patients with BCRL were divided equally into two groups. Both groups received complete decongestive therapy (CDT). Treatment and the laser moxibustion group received an additional CO₂ laser treatment once a day for 7 d. Eight acupoints on the affected arm were selected. Two acupoints were irradiated simultaneously for 5 min and each laser treatment lasted for 20 min. The primary outcome was the arm circumference and was evaluated at day 0 and day 7. The secondary outcomes included muscle strength grading, the visual analog scale (VAS) score of swelling falling, the Functional Assessment of Cancer Therapy-Breast (FACT-B), and the Upper Limb Lymphedema Quality of Life (ULLQoL) score. They were evaluated at the baseline and follow-up time.**Results:** After treatment, the average arm circumference of the affected limb decreased significantly ($P < 0.05$) in both groups and the reduction was more significant in the laser moxibustion group ($P < 0.05$). The VAS score for swelling falling was statistically significant lower in both groups ($P < 0.05$) and the reduction was more significant in the laser moxibustion group ($P < 0.05$). There was no significant difference in muscle strength grading between the two groups ($P > 0.05$). The overall quality of life score for breast cancer patients improved significantly in both groups after 2 weeks of treatment ($P < 0.05$), with the laser moxibustion group showing greater improvement than the control group ($P < 0.05$). The ULLQoL score improved in both groups after 4 weeks of treatment ($P < 0.05$), and there was no statistically significant difference between the two groups ($P > 0.05$).**Conclusion:** The 10.6 μm CO₂ laser moxibustion can alleviate the swollen of the affected arm, relieve limb discomfort and improve the quality of life of BCRL patients.

Abstract submission # 133

A Top-down Neural Circuit for Affective-motivational**Responses of Pain Relief Induced by Electroacupuncture**Sheng Liu, Hui Liu, Meiyu Chen, Jiaqi Lu, Qiyong Li
Shanghai University of Traditional Chinese Medicine, ChinaPeripheral neuromodulation, which can be considered as a flow of signals from the body to the brain, influences mental and physiological states. However, whether peripheral neuromodulation, in particular electroacupuncture (EA), may regulate specific neural circuits and evoke affective and motivational responses remains largely elusive. Here, we investigate the contribution of EA to pain relief in humans and animals in the context of pain. Extracellular recording, immunofluorescence, pharmacological, optogenetic, and chemogenetic approaches were used. EA analgesia induced conditioned place preference (CPP) and attenuated anxious- or depressive-like behaviors, but crucially only in pain states. EA stimulation reinstated extinguished EA-paired preference, which did not require ongoing nociceptive signaling. Furthermore, EA activated glutamatergic neurons in the infralimbic (IL) cortex in animal model of pain. Optogenetic activation of IL glutamatergic (ILGlu) neurons mimicked EA-induced analgesia and CPP behaviors whereas their inhibition reversed the effects promoted by EA. In addition, the activation of ILGlu to γ -aminobutyric acid (GABA)-ergic neurons in the nucleus accumbens shell (NAc shellGABA) projection is necessary for EA-induced CPP and anxiolytic-like behaviors. We identified this ILGlu to NAc shellGABA top-down circuit that is crucial for EA-induced pain relief and motivational behaviors and may potentially be exploited towards EA effects in psychological and clinical situations.

Abstract submission # 292

Acupuncture at Neiguan (PC6) Suppresses Premature Ventricular Complexes Occurring after Myocardial Infarction by Alleviating Inflammation and FibrosisBingmei Zhu¹, Hao Hong², Xin Cao³
1. West China Hospital, Sichuan University, China
2. Suzhou University, China
3. Chengdu University of Traditional Chinese Medicine, China**Objective:** Acupuncture at Neiguan (PC6) has long been used for treating cardiovascular diseases, but its antiarrhythmic effect and the underlying mechanisms have not yet been well investigated, especially regarding premature ventricular complexes (PVCs) that occur post-myocardial infarction (MI). The purpose of this study was to study the antiarrhythmic effect of manual acupuncture applied to PC6 for a relatively long period (28 d) and to elucidate the mechanism in mice.**Methods:** An MI mouse model was generated by ligating the left anterior descending coronary artery in male C57/BL6 mice ($n = 31$). Manual acupuncture at PC6 was applied 7 times weekly for 4 weeks.

The state of myocardial injury was characterized by electrocardiography (ECG) and echocardiography. Inflammation was detected by enzyme-linked immunosorbent assay and immunohistochemical staining. Fibrosis was evaluated by Masson's trichrome staining. RNA sequencing was used to explore the differentially expressed genes (DEGs) among the different groups after treatment.

Results: Acupuncture at PC6 lowered the incidence of spontaneous PVCs after MI injury (1/9, 11%) compared to that in mice without acupuncture treatment (6/9, 67%) and improved the ejection fraction from 31.77% in the MI mice to 44.18%. Fibrosis was reduced after PC6 treatment. RNA-seq showed many DEGs involved in the immune system and inflammatory response pathway. Further studies confirmed that inflammation at the circulation level and cardiac tissue was inhibited in MI + PC6 mice, accompanied by suppressed sympathetic activation.

Conclusion: A 28-day treatment of acupuncture at PC6 reduced spontaneous PVCs and improved systolic function, possibly by suppressing inflammatory response-mediated fibrosis and sympathetic hyperactivity.

Abstract submission # 264

Acupuncture For Muscle Atrophy Therapy

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Objective: Skeletal muscle atrophy resulting from nerve damage poses a significant challenge in patient recovery, impacting mobility and strength. Recent attention has turned to acupuncture, a traditional Chinese medicine technique known for its efficacy in relieving sore muscles. This research delves into the effectiveness of acupuncture in promoting muscle regeneration and functional motor recovery in denervated mice, employing different treatment frequencies and locations.

Methods: Using a mouse model specific to sciatic nerve denervation, assessments based on muscle regeneration and functional recovery were conducted following a series of acupuncture treatments. Evaluation parameters included gait analysis, muscle mass assessment, and immunofluorescence staining.

Results: All acupuncture-treated groups demonstrated improvements in both stride length and frequency, with the group receiving daily acupuncture at the leg showing the most substantial progress. After 2 weeks of denervation, a significant reduction in muscle mass was observed in the gastrocnemius muscles. Daily acupuncture treatments at leg and nerve defect sites exhibited substantial increases in muscle mass compared to non-acupuncture-treated groups, with daily treatments proving more effective than every other day treatments. Muscle/body weight analysis and immunofluorescence staining results revealed that acupuncture positively impacted muscle mass preservation, reduced protein degradation factors, and promoted growth factors. Acupuncture effectively inhibited the release of muscle degradation factors F-box protein 32 and tripartite motif containing 63 while enhancing the intensity of growth factors phospho-AKT serine/threonine kinase 1 and eukaryotic translation initiation factor 4E binding protein 1. Additionally, acupuncture significantly lowered reactive oxygen species levels compared to non-acupuncture-treated groups.

Conclusion: The study emphasizes the critical roles of acupuncture frequency and location in treatment effectiveness, with daily treatments contributing to better muscle mass preservation and every-other-day treatments proving more effective in promoting functional motor recovery. acupuncture at the back was found to be more effective than at the atrophy site in promoting tissue repair and regeneration.

Abstract submission # 45

Antihypertensive Electroacupuncture by Sympathoinhibition, Parasympathetic excitation, and Anti-Inflammation

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Objective: Autonomic imbalance and inflammation contribute to hypertension. Increased sympathetic tone and inflammation are not commonly addressed by conventional drugs controlling high blood pressure (BP). Electroacupuncture (EA) at ST36–ST37 reduces both increased sympathetic activity (SI-EA) and BP. EA (SP6–SP7) decreases inflammation (AI-EA) and combined with SI-EA displays a greater BP reduction in hypertensives. The receptor $\alpha 7$ nicotinic acetylcholine ($\alpha 7$ nAChR) is involved in anti-inflammation. We hypothesized that the combination of SI-EA and AI-EA could alleviate hypertension by both sympathoinhibition and parasympathetic excitation while $\alpha 7$ nAChR is involved in anti-inflammation.

Methods: Hypertensive salt-sensitive rats (SSRs) on salt diet are grouped into EA (ST36–ST37 + SP6–SP7) or sham-EA. Normotensive SSRs are fed regular rat chow. Central and peripheral neuronal activities were measured in EA (SI + AI), sham-EA hypertensive, and normotensive rats. Craniotomy allowed access to rostral-ventrolateral medulla (rVLM, pre-sympathetic) and nucleus ambiguus (NA, pre-parasympathetic) for extracellular recording. Peripheral nerve activities of sympathetic (SNA) and vagal (VNA) are measured by whole nerve recording. Other EA or Sham-EA rats received 3-week daily (i.p.) $\alpha 7$ nAChR antagonist or saline.

Results: At the baseline, activity in the rVLM was $[0.31 \pm 0.06]$ spikes/s ($n = 9$), NA was $[2.27 \pm 0.33]$ spikes/s ($n = 12$), SNA was $[10.9 \pm 0.6]$ impulses/s ($n = 5$), and VNA was $[43.4 \pm 1.8]$ impulses/s ($n = 5$). EA reduced ($P < 0.05$) rVLM activity ($[0.52 \pm 0.07]$ spikes/s, $n = 16$) and SNA ($[16.1 \pm 0.5]$ impulses/s, $n = 5$) compared to sham-EA (rVLM: $[1.36 \pm 0.10]$ spikes/s, $n = 12$; SNA: $[22.70 \pm 0.98]$ impulses/s, $n = 5$). In contrast, activity in the NA ($[1.20 \pm 0.16]$ spikes/s, $n = 12$) and the VNA ($[28.6 \pm 1.7]$ impulses/s, $n = 5$) was increased ($P < 0.05$) in the EA-treated rats compared to the sham-EA rats (NA: $[0.69 \pm 0.06]$ spikes/s, $n = 12$; VNA: $[13.6 \pm 1.4]$ impulses/s, $n = 5$). Blockade of $\alpha 7$ nAChR in four EA (SI + AI) rats reversed the BP (from $[135.0 \pm 2.1]$ to $[197.0 \pm 6.9]$ mmHg, $P < 0.05$) in contrast to saline in three rats (from $[139.0 \pm 2.2]$ to $[138.0 \pm 0.7]$ mmHg). Cytokines are decreased ($P < 0.05$) (hs-CRP from $[63 \pm 8]$ to $[20 \pm 2]$ mg/mL and interleukin-6 decreased from $[209 \pm 10]$ to $[97 \pm 12]$ pg/mL) in EA (SI + AI) compared to sham-EA rats.

Conclusion: EA aimed at sympathoinhibition, parasympathetic excitation, and anti-inflammation through $\alpha 7$ nAChR likely decreases BP in hypertensives.

Abstract submission # 63

Barriers and Facilitators to Integrating Acupuncture into the United States Healthcare System: A Scoping Review

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Background: Acupuncture is a widely practiced complementary and integrative health modality that has multiple clinical applications. The use of acupuncture in the United States is rapidly increasing. Although studies have shown efficacy and effectiveness of acupuncture for

various ailments, the integration of acupuncture into the United States healthcare system remains a challenge. Little is known about the factors affecting this integration.

Objective: To provide a systematic review of the barriers and facilitators affecting the integration of acupuncture into the United States healthcare system.

Methods: Four electronic databases were searched. Three independent reviewers were involved in screening and data charting processes. Findings were synthesized and categorized into four levels based on the Social Ecological Model.

Results: A total of 24 studies were included in the final review. The barriers and facilitators affecting the integration of acupuncture were mapped into four levels (individual, interpersonal, organizational, and policy). The most frequently reported barriers and facilitators were mapped into the Social Ecological Model constructs within the “individual” level (i.e., beliefs and attitudes of acupuncture, practical issues, social determinants of health) and the “organizational” level (i.e., credentialing, space and facility, referral system). Other barriers and facilitators were mapped within “interpersonal” level (i.e., effective communication, difficulty to explain and promote acupuncture during busy clinical hours) and “policy” level (i.e., cost, lack of health insurance reimbursement).

Conclusion: This review has identified and synthesized the breadth of evidence on the barriers and facilitators to the integration of acupuncture into the United States healthcare system. Results of this review will guide future implementation studies to develop and test implementation strategies to integrate acupuncture into the United States healthcare system.

Abstract submission # 96

Brain Functional Network Elicited by Acupuncture with Reinforcing-reducing Manipulations: A Graph Theory Analysis Study Based on Functional Near-infrared Spectroscopy Signals

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Objective: Traditional acupuncture with reinforcing-reducing manipulation is essential for clinical efficacy, whereas the underlying central mechanism of it remains unknown. This study with multiple-channels functional near-infrared spectroscopy (fNIRS) aims to explore cerebral-response modes during acupuncture with reinforcing-reducing manipulations.

Methods: fNIRS data were recorded from 35 healthy participants during the lifting-thrusting reinforcing manipulation (LTR_{ei}), the lifting-thrusting reducing manipulation (LTR_{ed}), and the even reinforcing-reducing manipulation with lifting-thrusting (ERR). A functional network was constructed by calculating the Pearson correlation coefficients among 36 channels covered the human Brainnetome Atlas. The graph theory analysis and clustering algorithm based on K-means were combined to be conducted.

Results: The results showed that the functional network of all acupuncture manipulations had small-world topology. Compared to the baseline, ERR and LTR_{ed} exhibited an increased clustering coefficient (C_p), local network efficiency (E_{local}), and global network efficiency (E_{global}). Whereas, LTR_{ei} showed a decreased C_p, E_{local}, and E_{global}. ERR and LTR_{ed} showed an increased nodal betweenness (B) and nodal degree (D) mainly located in the frontopolar cortex (FP). LTR_{ei} exhibited an increased D mainly in the dorsolateral prefrontal cortex (DLPFC) and primary somatosensory cortex (S1). In addition, the comparison of nodal properties among

three acupuncture manipulations manifested differences mainly in the DLPFC, S1, and primary motor cortex (M1). Global and regional properties based on the K-means cluster analysis revealed differences among three acupuncture manipulations with 80% accuracy.

Conclusion: The results suggest that three acupuncture manipulations can induce significant changes in cerebral hemodynamic responses. These changes can be detected using graph theory measures in conjunction with K-means cluster analysis.

Abstract submission # 131

Chinese Medicine Gushukang Capsule for Treating Primary Osteoporosis: A Bayesian Network Meta-analysis of Randomized Controlled Trials

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Objective: To systematically evaluate the efficacy and safety of Gushukang (GSK) capsule in combination with conventional medications in treating primary osteoporosis.

Methods: Randomized controlled trials (RCTs) on the treatment of primary osteoporosis with GSK capsule were searched in 8 databases. The literature search was conducted from database inception to October 8, 2022.

Results: The results of the network meta-analysis suggested that the ranking of drugs to improve bone density in the lumbar spine was: GSK capsule + estrogen + vitamin D (VD) + bone peptide (BP) + calcium > GSK capsule + BP + VD + calcium > BP + VD + calcium > VD + BP > GSK capsule; the ranking of drugs to relieve pain was: GSK capsule > calcium > GSK capsule + calcium > BP + VD + calcium > VD + bone peptides > Gushukang capsule + estrogen + VD + BP + calcium > GSK capsule + BP + VD. Direct meta-analysis showed that the GSK capsule + VD and calcium group was superior to the VD + calcium group in improving bone mineral density of the lumbar spine (standardized mean difference [SMD] = 1.08, 95% confidence interval [CI]: [0.12 to 2.04]). GSK capsule + VD group was superior to the VD group (SMD = 4.08, 95% CI: 3.61 to 4.56) in improving bone density in the femoral neck and greater trochanter (SMD = 5.15, 95% CI: 4.49 to 5.82). GSK capsule was superior to VD + calcium group in improving bone density in the middle and distal one-third of the flexor ulna (SMD = 0.64, 95% CI: 0.47 to 0.81). For reducing alkaline phosphatase (ALP), GSK capsule + VD group was better than VD group (MD = -22.40, 95% CI = -27.48 to -17.31). GSK capsule + BP group was superior to the BP group in pain relief (MD = -1.34, 95% CI = -2.55 to -0.14).

Conclusion: The effectiveness of GSK capsule in combination with conventional medications for the treatment of primary osteoporosis is unclear. More high-quality RCTs are still needed.

Abstract submission # 76

Clinical Effect and Factors of Acupuncture for Knee Osteoarthritis: A Systematic Review and Pairwise and Exploratory Network Meta-analysis

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Objective: To evaluate the effect and safety of acupuncture in patients with knee osteoarthritis (KOA) and explore whether the effect of acupuncture differed according to acupuncture type, acupuncture dose, and follow-up time.

Methods: Eight databases were searched from inception to November 13, 2023. Randomized controlled trials (RCTs) comparing

acupuncture with sham acupuncture, nonsteroidal anti-inflammatory drugs (NSAIDs), usual care or waiting list groups, intra-articular (IA) injection, and blank groups in patients with KOA were included. The selection of studies, data extraction, and risk of bias was completed by 4 reviewers independently.

Results: Eighty RCTs (9933 participants) were included. Evidence of very low or low certainty suggested that acupuncture may reduce pain intensity compared with sham acupuncture (standardized mean difference [SMD] = -0.74 , 95% confidence interval [CI]: -1.08 to -0.39), NSAIDs (SMD = -0.84 , 95% CI: -1.25 to -0.43), usual care or waiting list groups (SMD = -0.85 , 95% CI: -1.33 to -0.37) and blank groups (SMD = -1.65 , 95% CI: -1.98 to -1.32), but not the IA injection. Similar results were also found in other outcomes. For most of the subgroup analyses, the direction of effect favored electroacupuncture (median SMD = -1.14 ; range from -0.77 to -1.90) or high dose of acupuncture (median SMD = -1.37 ; range from -0.74 to -2.51) on pain reduction compared with different control groups. The network meta-analysis revealed that electroacupuncture (SMD = -0.76 , 95% CI: -1.36 to -0.15) had a greater effect on pain relief in patients with KOA compared with manual acupuncture. There was no statistical difference between acupuncture and sham acupuncture in pain relief or function improvement at 26 and 52 weeks.

Conclusion: The findings suggest that acupuncture may provide clinically important effect in reducing pain and improving physical function in patients with KOA, but the certainty of evidence ranged from low to very low. Electroacupuncture and acupuncture of higher intensity probably are its two potential factors contributing to the treatment of KOA.

Abstract submission # 125

Coordinate Clinic- and Home-based Pediatric Massage Therapy for Children with Autism Spectrum Disorder: A Randomized Controlled, Functional Near Infrared Spectroscopic (fNIRS) Study

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Background: Pediatric massage is a traditional Chinese medicine therapy which is often used in the treatment of children with autism spectrum disorder (ASD). It is suggested that mother-performed massage could enhance bonding and attachment relationship between parents and their children with ASD. We thus have developed a novel regimen called coordinate clinic- and home-based pediatric massage (CHPM), in which the treatment is conducted by registered Chinese medicine practitioners at clinic and parents at home in different days.

Objective: This randomized controlled study was aimed to evaluate the efficacy of CHPM in children with ASD and the associations with task-evoked functional near infrared spectroscopic (fNIRS) response.

Methods: A total of 78 children aged 3–10 years who met the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) diagnostic criteria for ASD participated in the study. They were randomly assigned to CHPM and Care-As-Usual (CAU) groups in a ratio of 1:1. For the CHPM group, participants received CHPM with 2 sessions a week in clinic and other 3–4 sessions a week at home for 12 weeks.

Results: Following 12 weeks of CHPM, most ASD-related measures dramatically improved compared to baseline values, including Autism Treatment Evaluation Checklist (ATEC) overall scale and subscales, whereas the CAU group exhibited significant improvement only on the ATEC subscale on speech and sociability. Furthermore, the decreased magnitudes of ATEC total score and subscale for health/physical/behavior score of CHPM group were markedly greater than those of CAU group ($P \leq 0.039$). Significant task-induced endpoint-to-baseline changes in the level of oxyhemoglobin (OHb)

were observed in the distributed frontal cortex associated with emotion and higher-order cognitive functions.

Conclusion: CHPM could serve an effective therapy for ASD and its therapeutic effects may be associated with its extensive modulation on the frontal cortex.

Funding: This study is supported by the University of Hong Kong-Shenzhen Hospital (HKU-SZH) Incubation Program.

Trial registration: ClinicalTrials.gov identifier NCT04220086.

Abstract submission # 29

Developing Implementation Strategies for Promoting Integrative Oncology Outpatient Service Delivery and Utilisation: A Qualitative Study in Hong Kong

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Objective: Current evidence supports the use of integrative oncology (IO) interventions in cancer supportive care. The demand for outpatient IO services in Hong Kong is expected to soar following the surge in cancer incidence in an ageing population. This study identified the implementation determinants of delivering and utilising outpatient IO from local stakeholders' perspectives and developed corresponding implementation strategies.

Methods: This study involved two sequential stages. First, with individual semi-structured interviews guided by the Theoretical Domains Framework, we explored stakeholders' views on the barriers to and facilitators for implementing IO. Second, guided by a TDF-based qualitative data analysis of interview transcripts, we performed intervention mapping to develop Behaviour Change Wheel-based implementation strategies that may overcome the barriers and strengthen the facilitators.

Results: We interviewed 31 stakeholders, including traditional Chinese medicine (TCM) practitioners ($n = 8$), biomedically-trained doctors ($n = 7$), nurses ($n = 6$), administrators ($n = 4$), caregivers ($n = 4$), and pharmacists ($n = 2$). The common local implementation determinants of IO are lacking (1) nursing and administrative manpower supporting IO service delivery, (2) awareness of IO services among healthcare professionals, administrators, patients, and caregivers, and (3) knowledge among healthcare professionals of herb-drug interaction and herbal toxicities.

Conclusion: We recommended a multi-faceted implementation strategies package that included arranging additional funding to train, recruit, and retain experienced nursing and administrative staff, devolving resources into demonstrating successful interprofessional collaborations and clinical evidence on IO effectiveness and safety, integrating evidence on herb-drug interactions and herbal toxicities into automated electronic health record systems monitored by pharmacists with dual qualifications in TCM and conventional pharmacy.

Abstract submission # 105

Effect of Acupuncture Duration in Patients with Knee Osteoarthritis: A Secondary Analysis of a Multi-center Randomized Controlled Trial

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Objective: To explore the influence of acupuncture duration on the effect of acupuncture for patients with knee osteoarthritis (KOA).

Methods: This secondary analysis was based on data from a

randomized controlled trial about acupuncture for KOA. Only data from the manual acupuncture (MA) group and electroacupuncture (EA) group was included. The needles were retained for 30-minute each time and the treatment was given three times a week for 8 weeks. The follow-up lasted until week 26. Outcomes were numerical rating scale (NRS) on pain, Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) function and the response rate. Perform intragroup comparisons of outcomes at different time points.

Results: The NRS and WOMAC function at week 8 were lower than those at week 4 ($P < 0.05$), and were no significant difference compared with those at week 26 in MA and EA groups ($P > 0.05$). Greater changes were observed in NRS and WOMAC function during 0–4 weeks compared with those during 4–8 weeks ($P < 0.05$) in both groups. The response rate at week 8 was higher than it at week 4 ($P < 0.05$), and was no significant difference compared with it at week 26 ($P > 0.05$) in both groups. Association was found between body mass index (BMI) and changes of NRS ($P < 0.05$), but not between BMI and WOMAC function ($P > 0.05$) in MA group, while no association was found between BMI and NRS or WOMAC function in EA group ($P > 0.05$). There was no association found between other factors and NRS or WOMAC function in both groups ($P > 0.05$).

Conclusion: For KOA patients, 8-week acupuncture was more effective than 4-week acupuncture in relieving pain and improving joint function, but growth rate of the effect slowed down with increasing duration of intervention. It was uncertain whether the long-term effect of 8-week acupuncture was better than that of 4-week acupuncture.

Abstract # 196

Effects of Electroacupuncture on Gastrointestinal Function Recovery After Laparoscopic Cholecystectomy: A Randomized-controlled Trial

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Objective: To evaluate the efficacy and safety of immediate electroacupuncture (EA) on the recovery of gastrointestinal function after laparoscopic cholecystectomy (LC).

Methods: A randomized, assessor-blinded controlled trial was conducted from October 2022 to March 2023 with a 1:1 allocation in the intervention group and the control group. Eighty-four patients with benign gallbladder disease based on conventional diagnostic criteria were randomly assigned to two different groups. The intervention group was treated with a 30-minute electroacupuncture (EA) that was given immediately after the operation. All the patients were treated with perioperative management based on enhanced recovery after surgery (ERAS) protocol. The time to first flatus was the primary outcome. Secondary outcomes included time to first defecation, time to first bowel sound, evaluation of abdominal distension and pain, and incidence of nausea and vomiting.

Results: The intervention group had shorter time to the first flatus and time to the first bowel sound. They also had lower grade and incidence of postoperative abdominal pain, postoperative abdominal distension, and postoperative nausea and vomiting.

Conclusion: One session of EA intervention immediately after surgery can reduce the incidence and severity of postoperative gastrointestinal dysfunction.

Abstract submission # 43

Effect of Self-administered Acupressure and Aerobic Exercise on Cancer-related Fatigue in Breast Cancer Patients Undergoing Chemotherapy: An Equivalence Randomized Controlled Trial

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Objective: Exercise is one of the most recommended strategies for treating cancer-related fatigue (CRF), but it has implementation challenges. Acupressure has potential and advantages as an alternative intervention for treating CRF. This study aimed to examine whether self-administered acupressure and aerobic exercise have equivalent effect on CRF in breast cancer patients.

Methods: This is a randomized controlled trial (12-week self-administered acupressure vs aerobic exercise). Breast cancer patients undergoing chemotherapy were recruited. Questionnaires, actigraphy and diary were used to collect the fatigue, activity level, sleep disturbance, quality of life and intervention adherence before chemotherapy, post-intervention (mid-chemotherapy, 12-week), and 1 month after chemotherapy. A preliminary analysis was performed among 45 participants using mixed models.

Results: The adherence of the acupressure group was significantly higher than the exercise group (92.9% vs 57.1%, $P = 0.017$). Fatigue in the acupressure group at post-intervention appeared to be lower than the exercise group, although the difference did not reach statistical significance (3.193 vs 4.65; mean difference [MD] = -1.458, 95% CI [confidence interval]: -3.110 to 0.194; $P = 0.082$). At 1 month after chemotherapy, fatigue was similar in the acupressure and exercise groups (2.057 vs 1.795; MD = 0.262, 95% CI = -0.564 to 1.088; $P = 0.524$). When comparing the 95% CI to our predefined equivalence margin of ± 1.5 points, equivalence can be established at 1 month after chemotherapy only, while equivalence at the timepoint of post-intervention was inconclusive. The two groups did not show significant differences in activity level, sleep disturbance, and quality of life.

Conclusion: Our preliminary findings support the equivalence of the effects of self-administered acupressure and aerobic exercise on fatigue one month after chemotherapy. It is likely that patient acceptability towards self-administered acupressure is higher than aerobic exercise. Findings are to be confirmed when full sample size is reached. If equivalence is proven, acupressure can be recommended as an alternative self-care strategy that is of equally low toxicity and inexpensive for managing CRF as exercise is.

Abstract submission # 210

Effectiveness of Early Acupuncture within 10 Days of Ischemic Stroke Onset on Limb Motor Dysfunction: A Prospective Cohort Study

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Objective: In order to evaluate the effect of early acupuncture therapy in patients with limb dysfunction after ischemic stroke.

Methods: The prospective multicenter cohort study included patients with ischemic stroke in four sites from December 2020 to September 2022. Patients were divided into exposure and control groups according to whether they received acupuncture therapy within 10 days of stroke onset. Modified Rankin Scale (mRS) scores at 3 months after onset was used as the main outcome indicator, and Fugl-Meyer assessment (FMA), Functional ambulation category scale (FAC), and Five-level EuroQoL five-dimensional questionnaire (EQ-5D-5L) at 3 months after stroke were used as secondary indicators.

Results: A total of 722 patients were included, with 409 in the exposure group and 232 in the control group. There were significant differences in some baseline demographic and clinical characteristics between the two groups. The results of repeated measures generalized estimating equations showed that the mRS score of the exposure group was higher than that of the control group at enrollment, while the FAC score and FMA score were lower than those of the control

group. The EQ-5D-5L score was similar between two groups, of which the indicators showed improvement over time. At 3 months after stroke onset, the mRS and FAC of the exposure group were similar to those of the control group, while the EQ-5D-5L and FMA scored higher than those of the control group. Logistic regression analysis showed that early acupuncture had a significant effect against the risk of residual disability at 3 months after stroke onset and a beneficial effect on the ability to walk independently, normal EQ-5D-5L score, and normal limb motor function.

Conclusion: Early acupuncture treatment can reduce the risk of residual disability, improve the ability to walk independently and quality of life, and promote motor function recovery of stroke patients.

Abstract submission # 74

Effects of Breathing Exercises Combined with Acupressure on Lung Function and Quality of Life of Elderly Patients with Pneumoconiosis

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Objective: This study aimed to investigate the effects of combining breathing exercises with acupressure on lung function and quality of life in elderly patients with pneumoconiosis.

Methods: From December 2019 to November 2020, 86 elderly patients (mean age: 70.22 years; 31.4% of which are female) with pneumoconiosis admitted to a specialized hospital for occupational diseases were recruited as participants. They were randomly divided into the intervention group ($n = 43$) and the control group ($n = 43$). The control group received conventional treatment and nursing care, while the intervention group underwent a 12-week program consisting of breathing exercises combined with acupressure. Lung function parameters, including forced vital capacity (FVC), forced expiratory volume in the first second (FEV1), and the FEV1/FVC ratio (FEV1%), were measured before and after the intervention. The World Health Organization Quality of Life-Brief Version (WHOQOL-BREF) was also used to assess the impact of the intervention on the patients' quality of life.

Results: Prior to the intervention, there were no statistically significant differences between the two groups in terms of lung function parameters, the total scores, or individual dimensions of the WHOQOL-BREF questionnaire including physiological health, mental health, social relations, and environmental health ($P > 0.05$). However, after the intervention, a statistically significant difference was observed between the two groups ($P < 0.05$) in FEV1. No significant differences were found in FVC and FEV1% ($P > 0.05$), but significant differences were observed in the total score of the WHOQOL-BREF and its dimensions of physical health, mental health, social relations, and environmental hygiene ($P < 0.05$).

Conclusion: The findings of this study suggest that combining breathing exercises with acupressure can effectively improve pulmonary ventilation and enhance the quality of life in elderly patients with pneumoconiosis.

Abstract submission # 85

Electroacupuncture for Perimenopausal Insomnia: A Randomized Controlled Clinical Trial

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Objective: To evaluate the effects of acupuncture on perimenopausal insomnia (PMI) and quality of life.

Methods: A semi-standardized, patient-blinded, randomized placebo-controlled trial was designed. A total of 84 patients were recruited, all of whom met the criteria for diagnosis of PMI. Either acupuncture therapy or a noninvasive placebo acupuncture therapy designed to treat insomnia was implemented 18 times over the course of 8 weeks (3 times per week for 4 weeks, twice per week for 2 weeks, once per week for 2 weeks). The primary outcome was the change of Pittsburgh Sleep Quality Index (PSQI) scores from baseline to the end of treatment at the week 8. Secondary outcomes included climacteric symptoms and quality of life measured by the Menopause Quality of Life (Men-QoL), Insomnia Severity Index (ISI), Self-Rating Anxiety Scale (SAS), Self-Rating Depression Scale (SDS), sleep parameters recorded in the actigraphy, and adverse events. The PSQI and Men-QoL were assessed at weeks 0, 4, 8, 12, and 20. Other assessments were performed at week 0 and week 8.

Results: The mean difference of PSQI scores measured at baseline and at the end of treatment between acupuncture and sham acupuncture groups was -2.38 (95% CI [confidence interval]: -3.46 to -1.30 ; $P < 0.001$). The acupuncture group was associated with significantly lower scores than the sham acupuncture group at week 12 and during the 20-week follow-up (all $P < 0.001$). Acupuncture was also associated with significantly higher quality of life in vasomotor and other physical dimensions (all $P < 0.001$). At the end of treatment, researchers found a significantly higher total sleep time, sleep efficiency, and lower number of average awakenings ($P = 0.007$, 0.023 , and 0.011 , respectively) in the acupuncture group than the sham acupuncture group.

Conclusion: The findings suggest that acupuncture may be a safe and effective treatment for PMI and improving quality of life of patients with PMI.

Abstract submission # 4

Enhancing Acupuncture Safety with Automated Needle Counting: A Cloud-Based Deep Learning Approach

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Forgotten needle is a serious safety incident often related to therapists' counting negligence. To reduce the risk associated with manual counting, this study aimed to develop a fast, mobile, and automatic needle counting system for acupuncture treatment, thereby improving the patients' safety. This research utilized transfer learning from a pre-trained Oriented region-based convolution neural network (R-CNN) model to create an algorithm capable of counting acupuncture needles in camera images. The model was fine-tuned using a training set of 590 pictures featuring copper and silver acupuncture needles. Training was then conducted using the MMrotate toolbox in a Google Colab environment with a Nvidia T4 GPU. Lastly, the model was integrated with a Telegram Bot interface for use in clinical practice. Model validation was carried out on a separate dataset with 532 pictures, each containing 20 acupuncture needles of different appearances. The Oriented R-CNN algorithm demonstrated a 96.43% accuracy with an average inference time of 0.183 seconds on the validation set. The automatic needle detection and counting system can potentially advance the digitalization of acupuncture treatment records and enable simultaneous monitoring of treatment processes at both bedside and nurse stations. This innovative application of artificial intelligence in acupuncture practice has the potential to improve clinical safety and efficiency.

Abstract submission # 9**Extending the Grading of Recommendations Assessment, Development and Evaluation (GRADE) in Traditional Chinese Medicine (TCM): The GRADE-TCM**

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Objective: To extend and form the “Grading of Recommendations Assessment, Development and Evaluation in Traditional Chinese Medicine” (GRADE-TCM).

Methods: Methodologies were systematically reviewed and analyzed concerning evidence-based TCM guidelines worldwide. A survey questionnaire was developed based on the literature review and open-end expert interviews. Then, we performed expert consensus, discussion meeting, opinion collection, external examination, and the GRADE-TCM was formed eventually.

Results: A total of 265 Chinese and English TCM guidelines were included and analyzed. Five experts completed the open-end interviews. Ten methodological entries were summarized, screened and selected. One round of consensus was conducted, including a total of 22 experts and 220 valid questionnaire entries, concerning 1) selection of the GRADE, 2) GRADE-TCM upgrading criteria, 3) GRADE-TCM evaluation standard, 4) principles of consensus and recommendation, and 5) presentation of the GRADE-TCM and recommendation. Finally, consensus was reached on the above 10 entries, and the results were of high importance (with voting percentages ranging from 50% to 81.82% for “very important” rating) and strong reliability (with the Cr ranging from 0.93 to 0.99). Expert discussion meeting (with 40 experts), opinion collection (in two online platforms) and external examination (with 14 third-party experts) were conducted, and the GRADE-TCM was established eventually.

Conclusion: GRADE-TCM provides a new extended evidence-based evaluation standard for TCM guidelines. In GRADE-TCM, international evidence-based norms, characteristics of TCM intervention, and inheritance of TCM culture were combined organically and followed. This is helpful for localization of the GRADE in TCM and internationalization of TCM guidelines.

Abstract submission # 56**Feasibility and Effects of Traditional Chinese Medicine Health Preservation Program for Depression: A Pilot Randomized Controlled Trial**

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Background: Integrative lifestyle medicine may be effective in

relieving depression. Traditional Chinese medicine (TCM) health preservation, an integrative program sharing similarities with lifestyle medicine, may be beneficial for depression. However, evidence regarding its feasibility and effects is scarce.

Objective: The study aimed to evaluate the feasibility and effects of the TCM health preservation program on depression and other health-related outcomes among adults with depression in Hong Kong.

Methods: A two-arm, pilot randomized controlled trial was performed in Hong Kong from April to October 2023. Forty-two participants with moderate depression recruited from communities were randomly assigned to the TCM health preservation program (intervention) group or the waitlist (control) group in a ratio of 1:1. The intervention group received six training sessions (2 h each time for 6 weeks), which guided them to implement lifestyle changes and coping strategies according to the TCM health preservation theory. Outcome measures included Patient Health Questionnaire-9 for depression, Generalized Anxiety Disorder-7 for anxiety, Perceived Stress Scale for stress, Insomnia Severity Index for insomnia, Fatigue Assessment Scale for fatigue, General Self-Efficacy for self-efficacy, Short-form 6-Dimension Health Survey for quality of life, and Health-Promoting Lifestyle Profile II for health-promoting behaviors.

Results: The Generalized Estimated Equation showed that, compared to the control group, the intervention group exhibited significantly greater effectiveness in reducing depression at immediate post-treatment ($d = 1.07$, $P = 0.004$) and at 6-week post-treatment ($d = 1.01$, $P < 0.001$). Besides, at immediate post-treatment, moderate effect sizes were found for the intervention group in improving anxiety ($d = 0.76$), fatigue ($d = 0.74$), sleep quality ($d = 0.78$), self-efficacy ($d = 0.56$), and health-promoting behaviors ($d = 0.63$, all $P < 0.05$). No significant difference was observed in other outcomes at immediate post-treatment.

Conclusion: The results suggest that the TCM health preservation program is efficacious in relieving depression and other related outcomes in Chinese Hong Kong adults. Further studies with a larger sample size, longer follow-up periods, and an economic evaluation are warranted.

Trial registration: ClinicalTrials.gov identifier NCT05799586.

Abstract submission # 209**How Ultrasound Imaging Changes the Acupuncture: International Research Trend Review**

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Acupuncture is the insertion of needles into specific areas of the body, known as acupuncture points, to induce a specific desired therapeutic response. However, the ambiguity of the stimulating targets will make it difficult to ensure the repeatability of the acupuncture method, not only between practitioners performing the same acupuncture but also within the same practitioner. Ultrasound imaging equipment is a representative imaging device that can observe the human body in real-time. The use of ultrasound equipment in acupuncture is one of the main ways to overcome the problems mentioned above, as it is safe, relatively accessible, affordable, and highly versatile. Due to these advantages, there have been attempts to apply ultrasound imaging to acupuncture in clinical practice to increase its safety and effectiveness, as well as in the educational settings. In this study, we examine the international research trends on how ultrasound imaging is advancing the practice of acupuncture from four perspectives: accuracy, safety, efficacy, and standardization.

Abstract submission # 97**Electroacupuncture to Assist Ventilator Weaning in Severe Stroke: A Prospective, Randomised, Single-blinded, Sham-controlled Trial**

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Objective: This study was undertaken to evaluate the effect of electroacupuncture on the duration of mechanical ventilation and diaphragm function in patients with severe stroke who are receiving ventilator support.

Methods: A total of 100 adult patients with acute severe stroke will be randomly assigned to receive active or sham (control) electroacupuncture for 30 min once a day until successful ventilator weaning (or until day 21 if unsuccessful). The primary outcome is mechanical ventilation duration. The Secondary outcomes include the 21-day weaning success rate, mortality rate, ICU stay, diaphragmatic excursion (DE), and diaphragm thickening fraction (DTF) measured by bedside ultrasound.

Results: There have been 51 patients enrolled in this study up to December 31, 2023. 25 patients were assigned to the active electroacupuncture group, and 26 were assigned to the control group. Age, sex, proportion of stroke types, and National Institute of Health Stroke Scale, Glasgow Coma Scale, and acute physiology and chronic health evaluation score 2 scores on admission were similar in both groups. The mechanical ventilation duration (hours) [121 [43.8, 194.25] vs 192 [96, 312], $P = 0.051$) appeared to be shorter in the active electroacupuncture group. ICU stay (20 [14.5, 24.5] vs 24 [15, 29.4]), $P = 0.051$) was also shorter in the active electroacupuncture group. While there was no difference in 21-day weaning success (4% vs 3.8%, $P = 1.000$) and mortality (95.5% vs 96.6%, $P = 1.000$) between the two groups. The active electroacupuncture group had better diaphragm function before weaning with DE (1.89 ± 0.55 vs 1.52 ± 0.55 , $P = 0.054$) and DTF (0.46 ± 0.10 vs 0.37 ± 0.17 , $P = 0.096$).

Conclusion: The Acu-west trial will be the first study to explore the efficacy of electroacupuncture for ventilator weaning in severe stroke patients receiving ventilator support. This trial potentially offers an effective treatment for improving diaphragm function and shortening the duration of mechanical ventilation.

Trial registration: ClinicalTrials.gov identifier NCT04816201.

Abstract submission # 245

Machine Learning to Predict the Efficacy of Acupuncture in Managing Chemotherapy-associated Insomnia among Breast Cancer Patients

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Objective: Insomnia is a highly prevalent symptom occurred during and post-chemotherapy. Acupuncture has shown potential in managing chemotherapy-associated insomnia. This study aimed to develop a machine learning model using baseline clinical variables to predict the efficacy of acupuncture for chemotherapy-associated insomnia among breast cancer patients.

Methods: A total of 100 breast cancer patients with chemotherapy-associated insomnia were included in this machine learning study. All patients received acupuncture treatment for 6 weeks, and the efficacy of the treatment was evaluated using the Insomnia Severity Index (ISI). Four feature selection methods, minimal redundancy maximal relevance (mRMR), random forest (RF), least absolute shrinkage and selection operator (LASSO), and Relief F Feature selection (ReliefF), were used to select 14 significant features from a pool of 33 baseline clinical variables for model training. The performance of five machine learning models (logistic regression, support vector machine,

K-nearest neighbor, RF, and XgBoost) was compared in predicting the efficacy of acupuncture for chemotherapy-associated insomnia.

Results: Among the five models, the RF model performed the best, achieving an area under the receiver operating characteristic curve (AUC) of 0.780, an accuracy of 0.705, a sensitivity of 0.718, a specificity of 0.715, and an F1 score of 0.642. The three most important clinical variables for prediction were baseline insomnia severity evaluated using the ISI, age, and baseline quality of life evaluated using the Functional Assessment of Cancer Therapy-Breast Cancer (FACT-B).

Conclusion: This study demonstrates that the developed machine learning model can assist practitioners in predicting which breast cancer patients will benefit from acupuncture treatment for chemotherapy-associated insomnia. This finding holds positive significance for improving the clinical efficacy of acupuncture in managing chemotherapy-associated insomnia.

Abstract submission # 103

Mild Moxibustion for Irritable Bowel Syndrome with Diarrhea: A Randomized Controlled Trial

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Objective: To evaluate the effects of mild moxibustion (MM) for the treatment of irritable bowel syndrome with diarrhea (IBS-D) through comparisons with those of placebo moxibustion.

Methods: This was a single-site, randomized controlled trial was conducted at the Shanghai Research Institute of Acupuncture and Meridian in China and enrolled 76 participants who met the Rome IV diagnostic criteria for IBS-D between May 2017 and December 2019. A total of 76 participants were randomized to either mild moxibustion (MM) or placebo moxibustion group (PM) in a 1:1 ratio. Eighteen sessions of MM or PM were implemented over 6 weeks (3 times per week). The primary outcome was adequate relief after 6 weeks of treatment.

Results: 76 patients with IBS-D who were randomized (38 in the MM group and 38 in the PM group) were included in the intention-to-treat (ITT) analysis set. After treatment at week 6, the response rate was significantly higher in the MM group than the PM group (81.58% vs 36.84%) with an estimated difference of 44.74 (95% confidence interval [CI]: 23.46 to 66.02, $P < 0.001$). No participant reported severe adverse effects.

Conclusion: The findings suggest that mild moxibustion may be more effective than placebo moxibustion for the treatment of IBS-D, with effects lasting up to 12 weeks.

Trial registration: ChiCTR identifier ChiCTR2100046852.

Abstract submission # 101

Moxibustion Alleviates Intestinal Inflammation in Ulcerative Colitis Rats by Modulating Long Non-coding RNA LOC108352929 and Inhibiting Phf11 Expression

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Objective: Long noncoding RNA (lncRNAs) are involved in the pathogenesis of ulcerative colitis (UC). Moxibustion, a traditional Chinese medicine, can improve symptoms in patients with UC and reduce intestinal inflammation in rats with UC. However, it remains unclear whether the ameliorative effect of moxibustion on intestinal mucosal inflammation in UC is related to lncRNAs.

Methods: Thirty-two rats were randomly assigned to four groups: normal control, UC, moxibustion (MOX), and sulfasalazine (SASP). The UC rat model was induced by administering 4% dextran sulfate

sodium (DSS) in drinking water. Rats in the moxibustion group underwent bilateral Tianshu (ST25) moxibustion using the herb-partition moxibustion method. Rats in the sulfasalazine group received SASP solution via gavage twice daily for seven consecutive days.

Results: Compared with the UC group, the disease activity index score was significantly lower in the MOX group. Compared with the UC group, the histopathological score was significantly lower in the MOX group. In addition, the colonic mucosa damage index and macroscopic scores were decreased in the MOX group. Moxibustion significantly decreased the protein expression of inflammatory factors including tumor necrosis factor- α (TNF- α), interferon- γ , and interleukin-1 β in the colonic tissues of UC rats, thereby suppressing the inflammatory response. Moreover, moxibustion exerted a regulatory influence on colon lncRNA and mRNA expression profiles, upregulating LOC108352929 and downregulating plant homeodomain zinc finger protein 11 (Phf11) in rats with UC. Moxibustion also led to a reduction in the expression and colocalization of Phf11 and nuclear factor- κ B in the colons of UC rats. Moreover, knockdown of LOC108352929 in rat enteric glial cells demonstrated a significant upregulation of TNF- α mRNA expression.

Conclusion: In summary, these data illustrate that moxibustion effectively ameliorates DSS-induced colonic injury and inflammation while exerting regulatory control over the lncRNA-mRNA co-expression network in UC rats. Collectively, the in vivo and in vitro studies suggested that LOC108352929-Phf11 may serve as a potential biological marker for moxibustion in the treatment of UC.

Abstract submission # 278

Moxibustion Improves Central Nervous System Inflammatory Response in Alzheimer's Disease by Regulating NLRP3 Inflammasomes

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Objective: Exploring the mechanism of moxibustion in preventing and treating Alzheimer's disease (AD) from the perspective of neuroinflammation.

Methods: This study focuses on 6-month-old APP/PS1 model mice and uses moxibustion at RN4 point as an intervention method to observe changes in spatial learning and memory behavior (such as water maze test and open field test), A β , polarization of microglia, and expression of NLRP3 inflammasomes and related proteins in brain tissue.

Results: Moxibustion at Guanyuan (RN4) on the abdomen of APP/PS1 mice for 8 weeks showed a relieving effect on neuroinflammation and delay-AD, mainly reflected in: (1) The moxibustion group performed better than the model group in four behavioral tests: Morris water maze test, Y maze test, elevated cross maze test, and open field test. Moxibustion intervention improved the learning and memory ability decline and anxiety like emotions of APP/PS1 model mice. (2) The activation of hippocampal microglia in the moxibustion group was inhibited, and M2 microglia with anti-inflammatory and neuroprotective effects showed significant polarization. Moxibustion has the effect of inhibiting neuroinflammation and regulating microglia polarization. (3) The expression of NLR family pyrin domain containing 3 (NLRP3) inflammasome related proteins toll-like receptor, NLRP3, PYD and CARD domain containing, caspase 1, interleukin-1 β , and FBJ osteosarcoma oncogene in the hippocampus of mice in the moxibustion group decreased. This may be a possible mechanism by which moxibustion inhibits microglial activation of neuroinflammation, enhances clearance of A β , and delays neuronal

apoptosis and necrosis. Moxibustion can effectively improve the learning and memory abilities and emotional abnormalities of AD model, reducing A β sedimentation inhibits the activation of microglia and promotes polarization of M2 microglia with anti-inflammatory and neuroprotective effects, suggesting that moxibustion may have the effect of inhibiting neuroinflammation in AD brain and regulating microglia polarization.

Conclusion: Moxibustion inhibits the expression of NLRP3 inflammasome related proteins, regulates upstream inflammatory factors, inhibits inflammatory cascade reactions, controls chronic neuroinflammation, and thus plays a protective role in nerves.

Abstract submission # 113

Acupressure Relieved Stress and Improved mental health for Individuals with High Stress Sensitivity and Qi-Stagnation Constitution

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Objective: We aimed to explore the efficacy of acupressure product with customized acupoint combination in regulating the individuals with high stress sensitivity and qi-stagnation.

Methods: A total of 60 participants were recruited, of which 30 individuals with qi-stagnation constitution (QSC, with a conversion score ≥ 40 on the qi-stagnation subscale) were assigned to the QSC group and 30 individuals (with a conversion score < 30 on the qi-stagnation subscale) were assigned to the non-QSC group (Ctrl group). The QSC group was subjected to acupressure for 8 weeks with a gradually decreasing frequency on Baihui (GV20), Neiguan (PC6), Hegu (LI4), Sanyinjiao (SP6), and Taichong (LR3). The Ctrl group did not receive any treatment. At weeks 0, 4, and 8, subjects were required to fill out the qi-stagnation subscale, Stress Perception Scale (PSS-14), and the Kessler 6 Scale (K6). After finishing these questionnaires, sustainable attention response task (SART) was conducted, and electrocardiogram data before, during, and after the SART test were recorded with Bioradio system.

Results: At week 0, the qi-stagnation score of QSC group was 54.93 ± 7.41 (mean $\pm$ standard deviation, the same below), PSS-14 was 44.47 ± 5.37 , and K6 score was 9.47 ± 3.16 , which were significantly higher than those of the Ctrl group in which the qi-stagnation score was 19.83 ± 7.84 , PSS-14 was 34.37 ± 7.53 , and K6 score was 4.90 ± 3.44 . At week 8, the qi-stagnation score of the QSC group was 37.68 ± 15.35 , PSS-14 was 39.13 ± 6.95 , and K6 score was 7.40 ± 3.24 , which were significantly lower than those assessed at week 0. During the SART test at week 0, the total power (TP) value in QSC group (1010.0 ± 595.6) was significantly lower than that in the Ctrl group (1545.0 ± 923.2), with a higher proportion of sympathetic nerve excitability. As the treatment period increases, the differences in TP, normalized units of high frequency, and low/high-frequency ratio between QSC group and Ctrl group gradually narrowed.

Conclusion: Acupressure reduced high levels of perceived stress and improved mental well-being and autonomic self-regulation in individuals with QSC.

Abstract submission # 60

Self-administered Acupressure is Effective for Reducing Symptom Cluster of Caregivers of Older Family Members: Secondary Analysis of a Randomized Controlled Trial

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Objective: Caregivers of older family members experience multiple stress-related symptoms such as fatigue, insomnia, depression, or anxiety. Acupressure is a self-administered intervention that may be beneficial for reducing individual stress-related symptoms in caregivers, but no research has studied the effect of acupressure on symptom clusters. The study aims to identify the symptom cluster(s) experienced by caregivers of older family members and study the effect of self-administered acupressure on the identified symptom cluster(s).

Methods: This was a secondary data analysis from a randomized controlled trial. A total of 207 participants were recruited. Participants were randomized into an 8-week self-administered acupressure intervention ($n = 103$) or wait-list control group ($n = 104$). Six participants withdrew. In this study, data on caregiver stress, fatigue, insomnia, and depressive symptoms at baseline, post-training, postintervention, and follow-up were extracted for analysis. First, exploratory factor analysis was performed to identify the symptom cluster(s). Subsequently, the composite symptom cluster scores were computed and mixed models were used to determine the intervention's effect on the identified symptom cluster(s).

Results: Caregiver stress, fatigue, insomnia, and depressive symptoms belonged to one symptom cluster. The factor loadings ranged from 0.620 (fatigue) to 0.748 (insomnia). Regarding intervention effectiveness, the composite symptom cluster scores of the intervention group were significantly lower than those of the control group post-training, postintervention, and follow-up, with effect sizes ranging from 0.44 to 0.49. The between-group difference of the change in the composite scores over time was statistically significant, as indicated by the product of the interaction of group and time effect ($P = 0.029$).

Conclusion: Self-administered acupressure is effective for improving the symptom cluster comprising stress, fatigue, insomnia and depressive symptoms in the caregivers of older family members. Further research to explore symptom cluster patterns more comprehensively and understand the underlying mechanism of acupressure on symptom clusters is warranted.

Abstract submission # 15

Single-Cell RNA Sequencing Reveals Differential Target Cells and Regulatory Network in Acupuncture Treatment of Asthma at Feishu (BL13) and Zusanli (ST36)

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Objective: Acupuncture is a well-established treatment for asthma, but its precise mechanism remains unclear. Given the complex pathophysiology of asthma, understanding how acupuncture consistently influences distinct signaling pathways and specific cell types could pave the way for innovative approaches to asthma treatment.

Methods: Single-cell RNA sequencing analysis was performed to investigate the potential therapeutic mechanism of acupuncture in a mouse model of house dust mite (HDM)-induced allergic asthma. Lung cells were collected from four groups of mice, including a control group, an HDM-induced group, and two groups induced by HDM followed by acupuncture therapy at acupoints Zusanli (ST36) and Feishu (BL13), respectively. Single-cell profiling can categorize the subtypes and identified potential therapeutic targets, and thus revealed immune cell and epithelial cell regulatory mechanisms.

Results: Results highlighted shifts in immune cell proportions, focusing on the regulatory mechanisms of key cell types like Th2 cells, Treg cells, and macrophages. Gene set enrichment analysis revealed distinct modulation pathways influenced by ST36 and BL13 in T cells. The acupuncture at ST36 alleviated asthmatic inflammation by promoting Treg cell differentiation and inhibiting Th2 cell development, while the acupuncture at BL13 primarily affected cDC2

cells, which are pivotal in asthma pathogenesis. The consistent impact of ST36 and BL13 on the restoration of interstitial monocytes and alveolar macrophages has been demonstrated. In terms of epithelial cell modulation, ST36 enhanced AT2 cell recovery, while BL13 promoted ciliated cell recovery for repair in HDM-induced asthma. The relevant mechanism involves multiple pathways, genes, and intercellular communications.

Conclusion: The elucidation of mechanism of regulatory effects of acupuncture at ST36 and BL13 not only offers insights into the traditional Chinese medicine theories regarding the synergy between local and systemic therapeutic effects of acupuncture but also presents potential therapeutic strategies around modulating cellular differentiation to regulate immune cell. Additionally, it unveils novel targets for mitigating asthmatic inflammation and promoting epithelial recovery.

Abstract submission # 16

Structured Chinese Herbal Medicine Case Reports to Inform the Community

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Objective: Traditional East Asian medicine (TEAM) has a long history of case reports for teaching and clinical training. Practitioners report that they find case reports more valuable than clinical trials. However, a specific case report framework suitable to capture the complexity of Chinese herbal medicine (CHM) treatments does not exist. This study aimed to co-design a CHM case report guideline (CHM-CARE) by clinicians and experts for CHM practitioners.

Methods: A two-phased mixed approach was applied to develop the case report guideline. In phase one, focus groups of TEAM practitioners determined what components of existing guidelines, e.g., CARE and Case Report in Chinese Medicine (CARC), were relevant to include, along with any additions or changes. Following the content analysis, a Delphi survey was conducted. The initial qualitative phase was essential to inform the first round of the Delphi. Data analysis was conducted by conventional content analysis followed by a two-round Delphi survey. All checklist items from the first Delphi round with a median of three or higher and crosschecked participants' comments were included in the second round, with consensus set $> 70\%$.

Results: A total of 18 CHM practitioners from Australia, New Zealand, the UK, and the USA joined five separate focus group discussions. The median age among focus group participants was 50.7 years (45% female and 55% male). The content analysis produced 349 codes and generated 98 checklist items informing the first round of Delphi. Our 15 (first round) international panelists rated 38% of checklist items below the median; consequently, 62% were assessed in the next round (which had 69 items and 14 experts). After completing the second round, 61 items (88%) reached consensus.

Conclusion: Key elements of a CHM-CARE case report checklist were identified, and a case report guideline was produced as a base for firm recommendations to TEAM practitioners operating in private practices outside China.

Abstract submission # 18

The Blinding Status of Sham Acupuncture and Cutoff Value of Bang Index in Acupuncture Clinical Trials: A Systematic Reviews and Meta-Analysis

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Objective: Acupuncture is a complex intervention that includes multiple factors such as participants perception, and doctor-patient interaction. The design and implementation of blinding in acupuncture studies is more difficult than that in pharmacological intervention studies. Therefore, blinding assessments are essential for acupuncture clinical studies to assess the quality of the research. The current criterion of ± 0.2 in drug studies is suboptimal for acupuncture research. No clear criteria exist for evaluating the success of blinding in acupuncture clinical trials. In this study, we assessed the general blinding status and sought to determine a Bang index cutoff value for sham acupuncture.

Methods: We searched PubMed, Embase, and Web of Science databases for retrieving studies published from 1999 to 2023 and constructed the meta-analysis library. Data on participants' characteristics, sham acupuncture design, and outcomes were extracted from publications. The Bang index and 95% confidence intervals (CIs) were pooled using the random-effects model. Meta-analyses were performed using a Bayesian hierarchical model and the appropriate cutoff value for sham acupuncture was determined based on the distribution of the upper 95th percentile.

Results: Sixty-four eligible studies were included. The mean Bang index for the sham acupuncture group showed that blinding of the sham group may be successful, but there was currently no recognized standard. A new cutoff value was calculated to determine the success of the sham group blinding.

Conclusion: Currently, blinding in most acupuncture studies is successful according to the criteria for drug studies, but this criterion may not apply to acupuncture studies. A new cutoff value was developed to determine the success of sham acupuncture. Our findings also suggest that future studies are necessary to further investigate the design and application of blinding assessments.

Abstract submission # 121

The Cerebral Activity Evoked by Deqi: Coordinate-based Meta-Analysis on fMRI Studies

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Objective: Deqi, the specific sensations patients experience during acupuncture, is commonly used as the clinical sign indicating effective acupuncture. Many clinical studies have suggested significant correlations between Deqi and acupuncture efficacy, but the mechanism of which remains unclear. This coordinate-based meta-analysis was to explore the cerebral activity evoked by Deqi and the correlation between acupuncture sensations and regional neural activity.

Methods: We searched PubMed, Cochrane Library, Web of Science, Scopus, China National Knowledge Infrastructure, Wan Fang Data, and VIP from the establishment to June 2023. Task-related fMRI studies assessing the regional brain activation difference between Deqi and non-Deqi were included.

Results: We included 12 studies involving 545 participants. Compared to non-Deqi, Deqi showed increased brain activation in the right insula (SDM-Z = 5.639, $P < 0.001$) and left superior temporal

gyrus (SDM-Z = 5.469, $P < 0.001$). The functional brain alterations in Deqi during acupuncture were increased activation in the left supramarginal gyrus (containing left superior temporal gyrus), right supramarginal gyrus (containing right insula), and right median cingulate/paracingulate gyri, right cerebellum superior (crus I), and left middle temporal gyrus. The left superior temporal gyrus is also part of the functional brain alterations in non-Deqi. Fullness, heaviness, and numbness are associated with the right insula. In addition, fullness, heaviness, numbness, and spreading are associated with increased activation in the cerebellum, whereas sharp pain is associated with decreased activation in the cerebellum. All significant peaks have low between-study heterogeneity ($I^2 = 0.59\%-20.63\%$) and no statistically significant publication bias.

Conclusion: The increased right insula activation could be the altered brain activation pattern of Deqi and the cerebral target for acupuncture efficacy. In addition, acupuncture sensations have potential correspondence with activated brain regions. This study provides a neural basis for using Deqi as the clinical sign indicating effective acupuncture.

Abstract submission # 54

Effects of Pediatric Tuina for the Treatment of Pediatric Functional Constipation

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Objective: Pediatric Tuina show beneficial effects in the treatment of functional constipation, however, few randomized controlled trials (RCTs) have been done in this area. Therefore, we designed this RCT to examine the effects of pediatric Tuina for pediatric functional constipation.

Methods: This was an open-label, three-armed, randomized, controlled clinical trial. Sixty children with pediatric functional constipation were recruited in Shandong University of Traditional Chinese Medicine (TCM) Affiliated Hospital and allocated into pediatric Tuina group, general massage group, and Medilac-Vita group randomly. (20 in each group). Participants in the pediatric Tuina group received four-step rubbing abdomen, Dujiao point grasping, and relevant pediatric Tuina manipulations based on TCM pattern identification. Participants in the general massage group received general massage manipulations on abdomen. Both pediatric Tuina and general massage were delivered once every 2 days. Patients in the Medilac-Vita group received Medilac-Vita treatment 2 times a day. The intervention period was 30 days in total. The primary outcome was the defecation interval time. Secondary outcomes included the degree of abdominal distension, defecation difficulty, and appetite. Adverse events were recorded.

Results: The difference of symptom scores between the pediatric Tuina group and the two control groups in defecation interval time and the degree of abdominal distension were significantly different ($P < 0.05$). In terms of defecation difficulty and appetite, the difference values of symptom scores in the treatment group and the control group were significantly different from those in the Medilac-Vita group ($P < 0.05$).

Conclusion: The effects of pediatric Tuina were significantly better than that of oral Medilac-Vita treatment in improving children's defecation and appetite. Pediatric Tuina could also improve abdominal distension and shorten the interval time of defecation compared to general massage.

Abstract submission # 21

The Mechanism of MicroRNA-199b-5p in Acupuncture Treatment of Knee Osteoarthritis

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China

Objective: To identify serum miRNAs that may be involved in response to electroacupuncture (EA) of knee osteoarthritis (KOA) patients and verify the mechanisms and targets of the miRNA by in vitro and in vivo experiments.

Methods: The serum differential exosome miRNAs of KOA patients before and after EA treatment were compared, and miRNAs were identified by sequence analysis and quantitative polymerase chain reaction (qPCR). After establishing a KOA animal model to verify differential miRNAs, miR-199b-5p was identified as a potential target. Chondrocytes cultured in vitro and in vivo an animal KOA model were examined using miR-199b-5p mimic and inhibitor. The functions and target genes of miR-199b-5p were evaluated using CCK-8, qPCR, luciferase, animal behaviour, enzyme-linked immunosorbent assay, safranin fast green staining, and micro-computed tomography assays. The role of miR-199b-5p in the knee joint in acupuncture was investigated in monosodium iodoacetate (MIA) injection-induced animal model.

Results: miR-199b-5p was up-regulated in KOA patient sera and KOA mouse joints and regulated ECM metabolism and cell viability in chondrocytes. Intra-articular injection of miR-199b-5p mimic in mice caused KOA-like pathological changes, and miR-199b-5p inhibitor alleviated KOA in a mouse model of OA. In EA treatment, miR-199b-5p exhibited an antagonistic effect.

Conclusion: Inhibition of miR-199b-5p attenuates pathological changes in KOA mice by targeting *Fzd6* and *Gcnt2*. Overexpression of miR-199b-5p induces changes in KOA and antagonizes the effect of EA treatment.

Abstract submission # 65

The Use of Traditional Chinese Medicine in COVID-19 Survivors with “Brain fog” in Hong Kong: An Analysis of Data from a Survey and Focus Group Study

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Objective: COVID-19 can possibly lead to a range of cognitive symptoms (“brain fog”). This study aimed at investigating the degree of brain-fog incidence and the self-management of COVID-19 survivors in Hong Kong, including the use of traditional Chinese medicine (TCM) and its services.

Methods: A cross-sectional online survey was conducted from May 2023 to June 2023. Socio-demographics, COVID-19 history, and data on self-management were collected. Participants with “brain fog” were identified based on the conditional minimal detectable change of the individual T-scores in the Neuro-QoL Cognitive Function Short-Form before and after COVID-19 diagnosis. Among the participants with “brain fog,” the characteristics of TCM users and non-users were compared using univariate analysis. Four 45-minute focus groups via Zoom were conducted with participants who identified themselves with “brain fog” from the survey ($n = 14$). Their experiences with cognitive symptoms, self-management strategies, and challenges in navigating the healthcare system were coded and analyzed through thematic analysis.

Results: A total of 631 valid responses were collected (completion rate: 76.5%) and 499 (79.1%) reported history of COVID-19. Among the 89 (17.8%) COVID-19 survivors experiencing “brain fog,” 45.0% ($n = 40$) used TCM after infection, most commonly Chinese herbal medicine ($n = 36$, 40.4%). More participants with “brain fog” started

using TCM after COVID-19 infection compared to those without “brain fog” (38.2% vs 16.1%, $P < 0.001$). Participants who reported more cognitive problems tend to use TCM (39.4 vs 40.8, $P < 0.001$). Qualitative analysis revealed that participants were receptive to using TCM to manage the “brain fog.” Barriers of TCM use included a lack of information or uncertainty due to health conditions and concerns about the lack of medical support. They expressed the need for more education, research, and government support regarding TCM services for “brain fog.”

Conclusion: Local COVID-19 survivors with “brain fog” were receptive to treatment with TCM. Initiatives should be implemented to enhance TCM services with accessibility and long-term research on its effectiveness needs to be conducted.

Abstract submission # 140

Therapeutic Effects and Autonomic Mechanisms of Transcutaneous Auricular Vagal Nerve Stimulation on Functional Abdominal Pain

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Objective: Patients with irritable bowel syndrome (IBS) and functional dyspepsia (FD) usually experience abdominal pain and reduced quality of life and need effective treatments. This study aimed to evaluate whether transcutaneous auricular vagal nerve stimulation (taVNS) could improve abdominal pain and quality of life in patients with IBS and FD.

Methods: A total of 64 patients with functional abdominal pain (21 with IBS and 43 with FD) with a pain score of 3 or higher out of 10 were randomized to receive two weeks of taVNS or sham-taVNS. Both taVNS and sham-taVNS was performed using a special set of parameters previously optimized for treating visceral pain 60 min twice daily via bilateral auricular concha (for the taVNS group) or elbow (for the sham-taVNS group). The abdominal pain score, dyspeptic symptom scales (DSS), IBS symptom severity scale score (IBS-SSS), anxiety and depression scores, the SF36 quality of life scale, and heart rate variability (HRV) were assessed before and after the treatment.

Results: In comparison with sham-taVNS, taVNS reduced abdominal pain (3.66 ± 0.12 vs 1.63 ± 0.10 , $P < 0.001$), DSS (12.29 ± 0.22 vs 10.41 ± 0.20 , $P < 0.001$), IBS-SSS (252.73 ± 4.88 vs 192.0 ± 7.42 , $P < 0.001$), anxiety (8.06 ± 0.20 vs 6.53 ± 0.18 , $P < 0.001$), and depression (4.41 ± 0.17 vs 3.63 ± 0.13 , $P < 0.001$). It was taVNS but not sham-taVNS improved quality of life scales in multiple aspects including physical functioning: 76.41 ± 0.64 vs 81.25 ± 0.59 , role physical: 69.53 ± 2.17 vs 87.50 ± 2.25 , bodily pain: 73.13 ± 0.832 vs 79.06 ± 0.52 , general health: 77.97 ± 0.67 vs 81.25 ± 0.50 , vitality: 74.69 ± 0.71 vs 80.63 ± 0.43 , social functioning: 74.61 ± 1.19 vs 80.08 ± 1.10 , role emotional: 81.25 ± 3.33 vs 88.54 ± 2.84 , and mental health: 77.13 ± 0.63 vs 82.00 ± 0.36 , $P < 0.001$ for all), compared to the baseline data. Compared to both sham-taVNS and baseline, the taVNS increased vagal activity assessed from heart rate variability ($P < 0.001$ for both). At the end of the taVNS treatment, the vagal activity was negatively correlated with the pain score ($r = -0.491$, $P = 0.004$).

Conclusion: taVNS improves abdominal pain, symptoms of IBS or FD, anxiety, depression, and quality of life in patients with IBS or FD, probably mediated by the autonomic mechanisms.

Abstract submission # 144

Transcutaneous Electrical Acupoint Stimulation Improves Motor Function in Patients with Upper Limb Spasticity after Stroke: A Preliminary Randomized Controlled Trial

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Objective: To investigate the impact of transcutaneous electrical acupoint stimulation (TEAS) on the motor function, degree of spasticity, and activities of daily life for individuals with post-stroke upper limb spasticity.

Methods: A randomized, sham-controlled, single-blind clinical trial was carried out and 40 patients experiencing upper limb spasticity within 6–12 months post stroke were randomly assigned to either TEAS group or sham-TEAS group. Patients in the TEAS group received TEAS on Jianyu (LI15), Binao (LI14), Quchi (LI11), Shousanli (LI10), Waiguan (TE5), and Hegu (LI4) of the affected side. Meanwhile, those in the sham-TEAS group was treated on the same acupoints, but without electrical stimulation. Both groups underwent

the same conventional treatment. The treatment was administered three times weekly over a six-week course. The primary outcome was the alteration in the Fugl-Meyer Assessment-Upper Extremity (FMA-UE) score. Secondary outcomes encompassed the Modified Ashworth Scale (MAS), the Wolf Motor Function Test (WMFT), Visual Analogue Scale (VAS) and the Barthel Index (BI). These outcomes were assessed at baseline, as well as at 3 and 6 weeks.

Results: After 3 and 6 weeks of treatment, the FMA-UE and VAS scores were significantly improved ($P < 0.01$), indicating that the TEAS improved the upper limb motor function and pain intensity compared to the sham-TEAS. After three-week treatment, no statistically significant intergroup differences were observed regarding MAS scores ($P = 0.097$), WMFT scores ($P = 0.069$), or BI scores ($P = 0.060$). However, after completing the 6-week session, the MAS score ($P = 0.015$), the WMFT score ($P = 0.019$), and BI score ($P = 0.008$) were significantly improved compared to the sham-TEAS group.

Conclusion: TEAS might improve motor function, degree of spasticity, pain levels, and the overall quality of life among individuals experiencing upper limb spasticity post-stroke.

POSTER ABSTRACTS

(Abstracts were arranged in an alphabetical order)

Abstract submission # 259

A Case on the Service Provision of Integrative Medicine of Japanese Kampo Medicine with the Orthodox Medicine in University and General Hospital Settings under Universal Health Insurance Coverage in Japan

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The purpose is to present an on-going project of the integrated medical service provision between traditional Japanese Kampo medicine, consisting of herbal, acupuncture, and moxibustion, and modern medicine in Hiroshima University Hospital Outpatient Division. Though Kampo Medicine, especially acupuncture and moxibustion have been practiced in Japan since the introduction from China in the 1400's, these therapies were generally not provided in the hospital settings because of limited coverage by National Healthcare Insurance. Therefore, the lack of education of Kampo medicine to medical doctors and healthcare professionals in the hospitals led to reluctance of use of Kampo medicine to their patients. Firstly, the Division hired two national-licensed acupuncture and moxibustion practitioners who have been trained to work in hospitals for one year and newly set up the service provision to the patients only prescribed from Kampo Medical Doctor accredited by Japan Society of Oriental Medicine. Secondly, Kampo Doctors promoted the colleagues to refer their patients with intractable diseases and symptoms, especially chronic pain, decreased appetite, and insomnia and re-referred them to acupuncture and moxibustion. Finally, the Kampo doctors and acupuncturists attended the conferences for the referrals and shared electric health information with the referring physicians. Additionally, the division began the trial therapy where the hospital nurse and other workers who have never experienced therapies to take it without fees. Finally, the number of the integrative medicine patients has risen to seventy-six from zero in one year in Division and the tendency continues. The conclusions are that the mutual understanding between the doctors and nurses and the acupuncture and moxibustion partitioners is vital for success in the integrative patient-centered medicine in the hospital. The key success factor includes education to both sides of professionals on the benefits and risks in terms of the western medicine provided in conventional settings.

Abstract submission # 41

A Comprehensive Discussion on the Fundamental Treatment and Management of Stroke and Its Sequelae by Traditional Chinese Medicine

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In ancient Chinese medicine, the understanding of stroke evolved through a prolonged debate between external and internal factors. From my practical experience, I have identified deficient kidney essence as the root cause of stroke, leading to the rise of liver fire and existing phlegm stasis, ultimately triggering the condition. Wind, fire, phlegm, and stasis are mere symptomatic expressions of this disease. In line with this understanding, nourishing kidney essence is the fundamental principle for treating such conditions. Dihuang Yinzi Tang, Sini San, and Buyang Huanwu Tang are considered foundational prescriptions for treating these diseases. Additionally, formulas like Xiaoxuming Tang, Roujin Tang, and Wuling San are

employed to address complex sequelae, often yielding significant and positive outcomes.

Foundational treatment: Dihuang Yinzi Tang aims to replenish kidney essence and address the underlying deficiency, is particularly effective in treating the root cause of stroke. Sini San targets the rise of liver fire, which helps balance the internal environment and prevent further complications. Buyang Huanwu Tang focuses on replenishing yang energy, promoting blood circulation, and restoring balance to vital bodily functions.

Management of complications: Xiaoxuming Tang could be used to address various complex sequelae resulting from stroke, and promote overall recovery. Roujin Tang is designed to enhance muscle flexibility and vitality, particularly beneficial for patients experiencing stiffness and reduce mobility. Wuling San could be employed to resolve dampness and alleviate complications such as edema or urinary dysfunction.

In conclusion, the approach emphasizing the restoration of kidney essence has proven highly effective in managing stroke and its associated complications. Based on years of practical experience, the use of these TCM formulas has demonstrated significant efficacy in achieving positive outcomes for patients.

Abstract submission # 282

A Cross-sectional Study of Osteoporosis Combined with Ischemic Stroke Disease: New Insights from the Bone-Brain Axis

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Objective: Functional interaction between bone and brain is increasingly gaining attention. Osteoporosis (OP) and ischemic stroke (IS), as the representative diseases, seriously endanger health of the middle-aged and elderly people. This study aimed to clarify if OP is associated with IS, and determine the related factors of OP co-existing with IS as well as the potential link between bone and brain.

Methods: This study analyzed the correlation between bone mineral density (BMD) and the morbidity of IS in 1540 participants by the cross-sectional survey. Among them, 520 subjects with OP were divided into two groups according to whether they suffered from IS: IS ($n = 60$) and Non-IS ($n = 460$). To ascertain the interrelationship, we conducted two analyses: normality test of related indexes and univariate analysis of population information and biomarkers.

Results: The prevalence of IS was significantly associated with differences in bone mass ($\chi^2 = 10.187$, $P = 0.006$), and there was a linear relationship between bone mass of hips and the prevalence of IS ($P < 0.001$). Further analysis of the osteoporosis population indicated that, the IS people were with the characteristics of older age, a higher proportion of women, and incidence of family history with cerebrovascular and diabetes, as well as high possibility of suffering from coronary heart disease, hyperlipidemia, hypertension, and type 2 diabetes mellitus, compared with subjects without IS ($P < 0.05$). In addition, the levels of osteosclerosis protein (OST) (15.98 ± 9.43) and procollagen type I N-terminal propeptide (P1NP) (59.04 ± 25.47) in subjects without IS were significantly higher than those with IS ($P < 0.05$).

Conclusion: Disease-related factors including age, gender, family history (cerebrovascular disease, diabetes), comorbidities (coronary heart disease, hyperlipidemia, hypertension, and type 2 diabetes mellitus), and biomarkers (OST and P1NP) may be important influencing factors of OP complicated with IS, and crucial to the prevention together with screening.

Abstract submission # 8

A Nationwide Population-Based Study of Herbal Medicine for the Treatment of Functional Dyspepsia

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Objective: Herbal medicine has been widely used for the treatment of functional dyspepsia (FD), especially in East Asian countries. The objective of this study was to analyze the prescription pattern of herbal medicine for patients with FD in Korean medicine clinical settings through the analysis of national health insurance claim data over the past 10 years and to check how herbal medicine has been used for FD within the scope of national health insurance.

Methods: All prescription data claimed to the Health Insurance Review and Assessment Service with the diagnosis of FD, and herbal medicine prescriptions from 2010 to 2019 were reviewed. We estimated the demographic and clinical characteristics, and annual prescription amount and cost of each herbal medicine. Frequent comorbidities of FD were investigated by analyzing the frequency of the International Classification of Diseases code used together with FD.

Results: In total, 19,388,248 herbal medicine prescriptions were identified. Herbal medicine prescriptions were mostly claimed by women, the elderly, outpatients at Korean medicine clinics, and national health insurance and the number increased every year. The most frequently prescribed herbal medicine was Pingwei-san (Pyeongwi-san) (31.12%), followed by Xiangshapingwei-san (Hyangsapyeongwi-san) (23.20%), Qiongxia-tang (Gungha-tang) (6.31%), and Banxiaxixin-tang (Banhasasim-tang) (6.25%). The total cost of herbal medicine prescriptions increased every year, and was highest for Xiangshapingwei-san (Hyangsapyeongwi-san) (19.37%), followed by Banxiaxixin-tang (Banhasasim-tang) (17.50%) and Pingwei-san (Pyeongwi-san) (15.63%). Musculoskeletal and connective tissue diseases including low back pain and myalgia were the most common comorbidities of FD.

Conclusion: This is the first study to investigate the disease burden and actual prescription pattern of herbal medicine for FD using claim data. Based on our study, clinical research and related health care policies should be established in future.

Abstract submission # 240

A Novel Approach to the Immediate Effects of Electroacupuncture on Dry Eye: A Case Series

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Objective: Dry eye disease (DED) is an inflammatory disorder that shares several features with autoimmune diseases. Research suggests that electroacupuncture (EA) is a promising alternative treatment option for this disorder; however, evidence of its immediate efficacy is limited. This case series aimed to provide a low-cost, fast-acting complementary alternative treatment option through anatomical placement combined with electrical stimulation.

Methods: Based on the anatomy and the dysfunction occurring in the gland or in nerve circuits, combined with the specific effects of traditional complementary medicine (acupuncture), we chose to needle both sides of the lacrimal glands, stimulated them using an electric current, and created an electric field circuit of continuous stimulation. This induced excitation of the nerves near the lacrimal glands, leading to the secretion of more tears.

Results: Three patients were diagnosed with DED, and used artificial tears or anti-inflammatory drugs for long-term relief of eye symptoms. However, the cure rates were low, and the side effects were high. To improve ocular symptoms, quality of life, and physical and mental health, the patients sought alternative complementary therapies and received electroacupuncture therapy. All patients showed significant improvements in fatigue and dryness of the ocular surface after 3–4 d

of treatment, and follow-up after 4 weeks showed no tendency for recurrence. No adverse reactions or unexpected events were observed during treatment.

Conclusion: We propose an innovative electroacupuncture treatment aimed at fewer acupuncture points, shorter periods, and faster healing that improves the symptoms of patients with DED in the short term. We recommend the widespread introduction and development of this novel protocol for healing ocular symptoms and improving patients' mental status and quality of life, which is a promising alternative treatment for patients with DED.

Abstract submission # 110

A Qualitative Exploration of How East Asian Medicine Concepts Can Be Used in Modern Health Research

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Objective: There is much published science supporting East Asian medicine (EAM) as a treatment for many health issues. Public Health has made great advancement in understanding the effects of health disparities globally. This project considered additional ways that East Asian Medical Models can help in the science of health disparities.

Methods: Twelve participants who are Biomedicine and/or EAM experts or social scientists were identified from the research team's network. Our goal in this purposive sample was to represent diverse backgrounds, educational and professional experience, expertise, age, gender, and geographic location. Following Institutional Review Board approval, all potential subjects identified for recruitment agreed to participate and were consented. Semi-structured interviews were conducted with each subject on the Zoom[®] platform, and ranged from 60 to 90 min. Recordings were transcribed and checked for accuracy, and double coded for themes. Any disagreement in coding was addressed in discussion between the coders. We assessed the data for saturation on key content areas, and when finding repetition of themes, chose to complete this stage of data analysis. Next, we employed a thematic analysis to better understand the key concepts.

Results: Seven main themes emerged from the interviews. These are necessary areas to consider when considering health disparities in EAM: three treasures, patient provider relationship, assessment of health status in EAM, prenatal essence, postnatal essence, determinants of health, belonging.

Conclusion: Scientific discovery and health care will improve with improvement in communication between medical practitioners and scientists from EAM and biomedicine. We use our data to consider ways that the EAM model of health can add to our understanding of the effects disparities on health.

Abstract submission # 269

A Real-world Retrospective Survey on the Effectiveness of a STEAM-based TCM Simulator

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Digital health is a rapidly growing field in technology, and traditional Chinese medicine (TCM) is also flourishing within this trend. However, its unique theoretical system and practical experiences can make it challenging for beginners and patients to comprehend. This is

where the TCM simulator comes in handy. It uses games to educate and entertain users, enabling them to learn about TCM in a relaxed and enjoyable atmosphere. The simulator has gained immense popularity among young people, helping them explore TCM. To assess the impact of STEAM-based TCM simulators in the real world, we conducted this retrospective research to gather user data over the past two years. We analyzed the practical effect of the simulator through questionnaires and other methods. These findings will provide valuable experiences and theoretical support for digital education in TCM.

Abstract submission # 250

A Tool for Assessing Adequacy/Quality of Acupuncture Administered in RCTs

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Objective: To rigorously and scientifically develop a tool for assessing adequacy/quality of acupuncture administered in randomized controlled trials (RCTs).

Methods: We conducted a systematic review on assessing the adequacy/quality of acupuncture administered in RCTs and summarized the characteristics and contents of acupuncture adequacy assessment in previous other studies. On this basis, we used modified Delphi method to reach a consensus, in which two rounds Delphi survey and one face to face meeting were held.

Results: In the systematic review, 40 studies were included. Thirty-two studies (82%) assessed the components of the acupuncture process and seven studies (18%) assessed the overall quality of the acupuncture. Twenty-two studies (56%) assessed the rationality of the control group. The components of acupuncture usually assessed included the number of sessions (21, 54%), choice of acupoints (19, 49%), acupuncture technique (14, 36%), and needle sensation induced (13, 33%). Twenty-five Delphi experts were from the United States, England and China (Beijing, Shanghai, Sichuan, Tianjin, and Guangdong provinces), respectively. Experts reached a consensus on the adequacy/quality of acupuncture in RCT assessment tool: seven signaling questions in four domains and corresponding judgments. The four domains include the design rationality of acupuncture and sham acupuncture protocols, and the implementation adequacy of acupuncture and sham acupuncture protocols.

Conclusion: A new tool for assessing the adequacy/quality of acupuncture in RCTs was rigorously developed through the systematic review and the modified Delphi method. The tool will be useful to systematic review authors and clinicians making use of acupuncture RCTs, by providing a coherent framework for understanding and identifying the adequacy/quality of acupuncture in RCTs. It might also help those designing, conducting and reporting acupuncture RCTs to achieve the most consistent findings with clinical practice.

Abstract submission # 141

Acupoint Matching Network based on Parametric Human Model

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Acupuncture, a cornerstone of traditional Chinese medicine (TCM), traditionally hinges on the practitioner's in-depth knowledge of human anatomy, encompassing the skeletal, muscular, vascular, and

nervous systems, for precise acupuncture point identification. This intricate process typically requires detailed measurements of body proportions and structures, which are largely dependent on the clinician's expertise and often involve repetitive tasks. Our study introduced a novel approach to acupuncture point localization using a parametric human model. This technique utilizes a uniform topological parametric model adaptable to various body types, streamlining the acupuncture point identification process by mapping these points to corresponding topological locations on different body surfaces. We used acupuncture points from the meridian bronze man model as a standard for 3D coordinates, allowing for the generation of these points in alternately parameterized human models. We gathered a dataset of 200 professionally identified human back acupuncture points to benchmark our 2D coordinate test dataset. Following this, we trained a deep neural network to discern body pose and shape parameters and to extract 3D human shapes and poses from RGB images. Employing projection loss, we correlated the actual 2D coordinate values with predicted distribution samples, enabling accurate position generation while reconstructing the human body surface model. Our results showed centimeter-level precision in localizing human back acupuncture points and also provided a real-time module for acupuncture point localization. This module significantly aids acupuncture practices, particularly in augmented reality (AR) and virtual reality (VR) settings, and illustrates the immense potential of merging traditional acupuncture techniques with cutting-edge technology.

Abstract submission # 288

Acupoint Specific Regulations Mediated by Interactions between Acupoint and Target Organs

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In the physiological state, somatic-viscera connection is the response of autonomic nervous system and internal organs to the external stimulation and the inner body itself, participating the structural basis of hemostasis. In the case of visceral pathology, it is the cause for somatic referral pain and acupoint sensitization. Moreover, somatic-viscera reflex neural pathway mediated acupuncture regulation of visceral functional disorders in a specific or systemic way, depending on spinal or brain neural circuit are involved. The somato-visceral reflex in the lower level of the central nervous system depends on convergent neurons in the spinal cord that respond not only to somatic stimuli, as acupuncture or electroacupuncture, but also to the periphery input from the inner organ. For one, perceptive pulses from surface of the body and the visceral organ may integrate and restrain one another, which is the mechanism of acupuncture analgesia. For another, convergent signals in the spinal cord turn segmental sympathetic or parasympathetic tones to the target organs which is the mechanism of topical somato-visceral reflex. In this way, acupoint specific regulations based on interactions between acupoint and target organs are mediated by somato-visceral segmental innervations in the spinal cord. In the last decades, research teams in our institute and other organizers have reported the specific and systemic efficacy of acupoints for the treatment of cardiac, gastrointestinal and urinary malfunctions.

Abstract submission # 160

Acupoints Selection Rule of Acupuncture and Moxibustion in Treatment of Non-alcoholic Fatty Liver Disease Based on Data Mining

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Objective: To provide a theoretical basis for the decision-making and standardization of clinical treatment plans of traditional Chinese medicine (TCM) by analyzing the rule of acupuncture and moxibustion acupoints in the treatment of nonalcoholic fatty liver disease (NAFLD) based on data mining.

Methods: Clinical research literature was retrieved in this field collected from China National Knowledge Infrastructure, Wanfang, Chongqing VIP, Chinese Biomedical Literature Database, and PubMed database from 2000 to 2022, and SPSS 25.0 and SPSS Moderler18.0 software were used for statistical analysis.

Results: After screening by inclusion and exclusion criteria, 102 articles were obtained. The high-frequency acupoints in this field were Zusanli, Fenglong, Sanyinjiao, Taichong, Ganshu, etc. The key meridians were Foot Yangming, Foot Taiyin, Foot Taiyang, and Foot Jueyin, with acupoints mostly located in the lower limbs, chest, abdomen, and back. The commonly used acupoint association analysis results were Zusanli-Fenglong, Zusanli-Taichong, Zusanli-Sanyinjiao, and Sanyinjiao-Taichong-Zusanli. The two high-frequency acupoint cluster groups are Sanyinjiao, Taichong, Zusanli, Fenglong, Ganshu and Yanglingquan, and Hegu, Guanyuan, Tianshu and Zhongwan.

Conclusion: Acupuncture and moxibustion treatment of NAFLD mainly adopts the principle of combining proximal point selection with distal point selection. The research results can provide a reference for point selection for clinical treatment, and hope to provide a theoretical basis for promoting the process of standardization of TCM.

Abstract submission # 175

Acupuncture Ameliorates Depression-Like Behaviors Through Modulating the Neuroinflammation Mediated by TLR4 Signaling Pathway in Rats Exposed to Chronic Restraint Stress

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Recently, emerging evidence has identified that stress-induced activation of neuroinflammation is considered to be one of the most prevalently precipitating factors in the pathogenesis of depression. Data from clinical trials and experimental findings have verified the efficacy and safety of acupuncture in the prevention and treatment of depression. However, the mechanism of the preventive effect of acupuncture for depression has not been fully elucidated. The current study aimed to investigate the preventive effect and mechanism of acupuncture through modulating the neuroinflammation mediated by toll-like receptor 4 (TLR4) signaling pathway in rats exposed to chronic restraint stress (CRS).

All rats were subjected to CRS for 21 d, with the exception of rats in control group. One hour before CRS, rats in acupuncture group were exposed to acupuncture at Baihui (GV20) and Yintang (GV29). The depression-like behaviors were evaluated by body weight assessment and sucrose preference test at 0, 7, 14, and 21 d. The expression of activated microglia in hippocampus was detected by

immunofluorescence. The expression of key proteins on TLR4 signaling pathway of TLR4, MyD88, TRAF6, NF- κ B p65, TNF- α , and mRNA of TLR4 in the hippocampus was detected by Western blot and real-time quantitative polymerase chain reaction to investigate the effect of acupuncture on stress-induced activation of neuroinflammation. The present study provided evidence that acupuncture exerted potential preventive effect that might be mediated in part by suppressing the neuroinflammation induced by TLR4 signaling pathway, which may be a promising treatment target to improve current treatments for depression.

Abstract submission # 109

Acupuncture and Moxibustion Therapy for Perimenopausal Depression: A Neuroimaging Exploration Using Functional Ultrasound Imaging

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Perimenopausal depressive disorder (PDD) is a psychological condition commonly observed in women aged 45–55 during the transition to menopause. It is characterized by predominant features such as depression, apathy, and mood fluctuations. Acupuncture has shown significant clinical efficacy in treating perimenopausal depressive symptoms. Moxibustion, another traditional Chinese medicine therapy, often exhibits rapid effectiveness in alleviating these symptoms. However, due to current technological limitations, there is a lack of comprehensive research explaining its mechanisms in swiftly adjusting the brain functional activity of specific emotional regions. Functional ultrasound imaging (fUS) is an advanced neuroimaging technique that enables real-time visualization and assessment of brain function in living organisms. Its principle involves tracking the movement of red blood cells through brain vessels to infer changes in neural activity. With high temporal resolution, fUS allows researchers to observe rapid changes in brain activity with exceptional precision. Moreover, it is noninvasive, ensuring repeated application without irreversible harm to the subjects. In this study, our research team applied moxibustion therapy to perimenopausal depression-induced rats, utilizing fUS to continuously observe differential changes in the functional connectivity of brain regions during moxibustion. The aim was to explore the regulatory mechanisms of moxibustion on perimenopausal depressive symptoms.

Abstract submission # 102

Acupuncture for Breast Cancer Related Fatigue: A Systematic Review and Meta-analysis

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Objective: To systematically evaluate the effectiveness and safety of acupuncture for the treatment of breast cancer-related fatigue (CRF).

Methods: Computer searches of Chinese and English databases such as China National Knowledge Infrastructure, Chongqing VIP, Wanfang, PubMed, Embase, and Cochrane Library were conducted to include randomized controlled trials of acupuncture for the treatment of breast cancer with fatigue from the time of library construction to October 2023, and literature screening and quality assessment were independently conducted by 2 investigators and cross-checked, and the data extracted were analyzed by using RevMan 5.3 software.

Results: Screening of the literature resulted in the inclusion of 12 randomized controlled trials with a total of 1084 patients. The results showed that acupuncture had a better effect on improving CRF scores compared to sham acupuncture ($n = 256$, standardized mean difference [SMD] = 0.26, 95% CI [−0.51, −0.01], $P = 0.04$, $I^2 = 0\%$) and had a long-term efficacy ($n = 209$, MD = −0.32, 95% CI [−0.59, −0.04], $P = 0.02$, $I^2 = 0\%$). Compared to usual care, acupuncture had

an ameliorating effect on fatigue scores ($n = 238$, $SMD = -0.39$, 95% CI $[-0.66, -0.12]$, $P = 0.005$, $I^2 = 0\%$). In terms of efficacy, the analysis showed that the efficacy of the acupuncture + usual care group was better than that of the usual care group ($n = 142$, $RR = 1.20$, 95% CI $[1.06, 1.36]$, $P = 0.005$, $I^2 = 0\%$). Only 1 of 12 studies reported adverse events, and no participant withdrew from the study due to adverse event in any study.

Conclusion: Acupuncture for breast CRF is an effective, safe, and reliable method, and can be used as one of the strategies for breast CRF management in clinical practice.

Abstract submission # 233

Acupuncture for Long-term Functional Independence of Acute Ischemic Stroke Patients: Protocol for a Cohort Study

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Objective: Stroke is the leading cause of disabling worldwide. Acupuncture has been widely used in stroke rehabilitation in China. However, there is no robust and clear evidence for acupuncture for stroke. Regarding real-world conditions, we designed the present cohort study and attempt to provide new evidence in the field of acupuncture for stroke treatment.

Methods: This is a cohort study involves four sites in Tianjin of China. A total of 800 patients with cerebral infarction will be included in the observation. Acute acupuncture treatment within 10 d after stroke is deemed as the exposure factor. The primary outcome is a favorable outcome at 90 d after stroke, defined as a modified Rankin Scale score of 0–2. Univariate analysis and multivariate analysis will be employed to analyze the results.

Discussion: It is hypothesized that acute acupuncture within 10 d after stroke would be associated with long-term greater improved functional outcome.

Ethics: The study protocol (version 1.0, 1 June 2020) has been approved by the Research Ethics Committee of the First Teaching Hospital of Tianjin University of Traditional Chinese Medicine (reference: TYLL2020[K]044).

Abstract submission # 99

Acupuncture for Mild Cognitive Impairment in the Elderly: A Meta-analysis and Acupoint Selection Pattern Study

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Objective: Recently acupuncture has played a key role in the prevention and nonpharmaceutical management of mild cognitive impairment (MCI) due to its advantages of small wounds, minimal pain, and high safety. However, there is currently no systematic review evaluating the safety and efficacy of acupuncture in treating MCI in the elderly. This review provides a protocol to explore the efficacy and safety of acupuncture for MCI in the elderly.

Methods: A total of 8 electronic databases were searched to identify eligible randomized controlled trials (RCTs) published up to February 1, 2023. Review Manager (v.5.4) was used for data synthesis, subgroup analysis and risk of bias assessment. The frequency usage and the meridian tropism patterns of acupoints of different RCTs were further identified.

Results: A total of 15 RCTs involving 883 participants were included. As compared with the control group, acupuncture has better clinical efficacy (odds ratio [OR] = 2.22, 95% confidence interval (CI) $[1.59, 3.10]$, $P < 0.00001$), mini-mental state examination score (standardized mean difference [SMD] = 1.12, 95% CI $[0.60, 1.63]$, $P < 0.0001$), montreal cognitive assessment test score (SMD = 0.97, 95%

CI $[0.44, 1.50]$, $P = 0.0003$) and activities of daily living scale score (SMD = 0.94, 95% CI $[0.57, 1.30]$, $P < 0.00001$), but did not show significant effect on CDT score (SMD = 2.67, 95% CI $[-1.39, 6.72]$, $P = 0.20$) and P300 latency difference (SMD = 0.31, 95% CI $[-0.21, 0.83]$, $P = 0.25$). The most commonly used acupoints for elderly MCI include Baihui (GV20), Sishencong (EX-HN1), Shenmen (HT7), Shenting (GV24), Taixi (KI3) and Sanyinjiao (SP6).

Conclusion: The evidence showed that acupuncture could effectively improve the cognitive function and daily living abilities of elderly with MCI. Acupuncture may be a complementary treatment to current therapies for MCI elderly. More rigorous experimental research, longer follow-up studies and observational studies of different TCM patterns should be further conducted and included to provide higher-level guidance for clinical treatment.

Abstract submission # 68

Acupuncture for Treating Attention Deficit Hyperactivity Disorder in Children: Update of a Systematic Review and Meta-analysis

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Objective: Acupuncture (AT) has been studied as a potential treatment for attention deficit hyperactivity disorder (ADHD) in children. The evidence currently available, however, may not support the use of AT in children with ADHD. This review aims to present updated evidence of the effectiveness of acupuncture in children with ADHD.

Methods: Nine databases were searched from their inception to December 30, 2023. Two researchers independently conducted study selection, data extraction, and evaluation. The quality assessment of the selected studies was performed using the Cochrane risk of bias assessment tool 2.0 (RoB 2). The characteristics of the included studies were presented in a tabular form, and a meta-analysis was performed using RevMan on the treatment effects of AT on ADHD symptoms.

Results: Fifteen studies involving 1265 patients evaluating the efficacy of AT for ADHD treatment were included in this review. Our findings indicated that AT complementing standard medication has a positive effect on improving conduct problems ($P < 0.0001$), learning problems ($P < 0.0001$), hyperactivity-impulsivity ($P < 0.00001$), and hyperactivity symptoms ($P < 0.00001$) in ADHD patients. However, acupuncture complementing standard medication has an equivalent effect on total treatment efficacy ($P = 0.16$). Compared with standard medication alone, AT alone was found to improve learning problems ($P < 0.00001$), hyperactivity-impulsivity ($P < 0.00001$), and hyperactivity symptoms ($P < 0.00001$) in ADHD patients, and showed better total treatment efficacy ($P = 0.0001$). Additionally, no major adverse events were reported. The risk of bias in the included studies was generally concerning.

Conclusion: While these studies show promising results, it is important to note that more research is needed to fully establish the effectiveness of acupuncture for treating ADHD in children. Evidence on the effectiveness of AT for ADHD patients is yet to be sufficient to provide recommendations for its usage.

Abstract submission # 218

Acupuncture Improved Hepatic Steatosis in High-fat Diet-induced Non-alcoholic Fatty Liver Disease Rats by Regulating Intestinal Microbiota

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Objective: Intestinal dysbiosis has been increasingly implicated in the pathogenesis of non-alcoholic fatty liver disease (NAFLD). Acupuncture has been shown to have beneficial effects on NAFLD, but the mechanism is not yet clear. This study explores the potential beneficial effects of acupuncture on intestinal microbiota in NAFLD.

Methods: An NAFLD model in Sprague-Dawley rats was established using a high-fat diet (HFD) for 10 weeks. NAFLD rats were randomly divided into control, model, and acupuncture groups. Following acupuncture treatment over 6 weeks, automated biochemical analysis was used to measure serum lipid metabolism parameters, including levels of alanine transferase, aspartate transferase, alkaline phosphatase, total cholesterol, triglycerides, high-density lipoprotein cholesterol, and low-density lipoprotein cholesterol. The level of serum inflammatory factors interleukin (IL)-6, IL-10, and tumor necrosis factor- α (TNF- α) were measured by enzyme-linked immunosorbent assay. The characteristics of steatosis were evaluated using quantitative computed tomography, hematoxylin and eosin staining, and oil red O staining in the liver, while the intestinal microbiota was determined using 16S rRNA gene sequencing.

Results: Acupuncture decreased the systemic inflammatory response, ameliorated dyslipidemia, and improved liver function indexes in NAFLD model rats. Tomography and staining indicated that acupuncture reduced steatosis and infiltration of inflammatory cells in the liver. 16S rRNA analysis showed that acupuncture reduced the Firmicutes to Bacteroidetes (F/B) ratio, increased the abundance of microbiota, including Bacteroidales_S24-7_group, Prevotellaceae, Bacteroidaceae, *Blautia*, norank_f Bacteroidales_S24-7_group, *Bacteroides*, and *Prevotella_9*, and decreased the abundance of Ruminococcaceae_UCG-014. Correlation analysis suggested a close correlation between lipid metabolism, inflammation factors, hepatic steatosis, and the changed intestinal microbiota.

Conclusion: Acupuncture can significantly improve lipid metabolism and the systemic inflammatory response in HFD-induced NAFLD rats, potentially by regulating intestinal microbiota composition.

Abstract submission # 153

Acupuncture Modulates Inflammatory Response in AOM/DSS Colorectal Cancer Mice through TRPV1-SIRT1 Pathway

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Objective: To explore the mechanism of acupuncture in inhibiting the inflammatory response of azoxymethane/dextran sulfate sodium (AOM/DSS)-induced colorectal cancer model mice through TRPV1-SIRT1 pathway.

Methods: A total of 60 C57BL/6 mice aged 6 weeks were randomly divided into control, model and acupuncture groups. The control group was not given any treatment while other mice were given AOM/DSS delivery to induce colorectal cancer. The model group was not given any treatment, the acupuncture group was treated with electroacupuncture at Zusanli (ST36) and Fenglong (ST40). Disease activity index (DAI) score was observed during the experiment. At the end of the experiment, the number of tumors was detected and the hematein-eosin pathological examination was performed. Western blot was used to detect the expression of TRPV1 and SIRT1 in colon tissue. Enzyme-linked immunosorbent assay was used to detect the expression of tumor necrosis factor- α (TNF- α), IL-6, IL-10 and IL-17 in colon tissue.

Results: AOM/DSS successfully induced colorectal cancer at 11

weeks. Compared with the control group, the DAI score of the model group was increased, the expressions of TRPV1, SIRT1 and IL-10 in colon tissue were decreased, and the expressions of TNF- α , IL-6 and IL-17 were increased. Compared with the model group, the DAI score was decreased, the number of colon tumors was decreased, and the expressions of TRPV1, SIRT1 and IL-10 were increased in the acupuncture group, and the expressions of TNF- α , IL-6 and IL-17 were decreased.

Conclusion: Acupuncture can effectively inhibit tumor formation in AOM/DSS-induced colorectal cancer animals, which is related to the anti-inflammatory effect of TRPV1-SIRT1 pathway.

Abstract submission # 255

Acupuncture of GB14 and ST2 for Alleviating Migraine via the Trigeminal Pathway in Rats

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Objective: This study aimed to investigate the analgesic effect of acupuncture on migraine using a nitroglycerin (NTG)-induced model with the stimulation of GB14 (Yangbai) and ST2 (Sibai).

Methods: Twenty-four male Sprague-Dawley rats were randomly divided into three groups: control, migraine model and electroacupuncture (EA). The control group received saline injection, while the migraine model was induced by NTG injection. Rats in the EA group received EA treatment on GB14 and ST2. Behavioral and head pain threshold tests were conducted. All animals were transcardially perfused, and the trigeminal ganglion (TG), brainstem and dura mater were dissected. Immunofluorescent staining was used to access the expression of calcitonin gene-related peptide (CGRP), c-fos, tryptase and lysosomal-associated membrane protein 1 (LAMP-1).

Results: Rats in the model group exhibited increased irritability and lower pain thresholds compared to the control group ($P < 0.05$). However, EA treatment led to a significant increase in pain threshold ($P < 0.05$). Following migraine induction, c-fos expression was predominantly observed in the trigeminal pathway. Additionally, the expression of CGRP in TG and Sp5, tryptase and the co-expression of tryptase/LAMP-1 mast cell in the dura mater were significantly higher than those of the control group ($P < 0.05$). Nevertheless, these expressions were significantly reduced by EA treatment ($P < 0.05$).

Conclusion: Given that the sensory innervation of GB14/ST2 and the dura mater primarily originates from the trigeminal nerve system, it is suggested that the analgesic effect of acupuncture on migraines by the stimulation of GB14 and ST2 may through the trigeminal nerve pathway.

Abstract submission # 246

Acupuncture Regulating Gut Microbiota in Abdominal Obese Rats Induced by High-Fat Diet

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Objective: To investigate the effects of acupuncture on metabolic health and gut microbiota dysbiosis in diet-induced abdominal obese model.

Methods: Male Sprague-Dawley rats were randomly distributed into normal chow diet (NCD) group and high-fat diet (HFD) group. After 12 weeks of HFD feeding, an abdominal obese rat model was established. The abdominal obese rats were further assigned to

acupuncture group ($n = 7$) and nontreated HFD group ($n = 7$). Acupuncture was applied to bilateral GB26 of rats for 8 weeks. Subsequently, the body weight, waist circumference (WC), visceral fat mass, and liver weight were measured weekly in all rats. Metabolic parameters such as total cholesterol, triglyceride, alanine aminotransferase, aspartate transaminase, and blood glucose were measured by an automatic biochemical analyzer. The serum levels of insulin (INS) were determined using rat INS enzyme-linked immunosorbent assay kit. Analysis of gut microbiota was carried out by 16S rRNA gene sequencing.

Results: Acupuncture decreased the body weight, WC, and visceral adipose tissues of HFD-induced abdominal obese rats. In addition, insulin sensitivity, glucose homeostasis, and lipid metabolism were improved by this treatment. Furthermore, electroacupuncture effectively modified the composition of gut microbiota, mainly via decreasing Firmicutes/Bacteroidetes ratio and increasing *Prevotella*_9 abundance.

Conclusion: Electroacupuncture can ameliorate abdominal obesity and prevent metabolic disorders in HFD-induced abdominal obese rats, via the modulation of gut microbiota.

Abstract submission # 88

AIR-Net: Acupoint Image Registration Network for Automatic Acupoint Recognition and Localization

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Acupoint localization is a critical aspect of various traditional Chinese medicine (TCM) practices, including acupuncture, moxibustion, and massage. In this study, we introduce an innovative atlas-based image registration framework using deep neural networks for the automatic identification and localization of acupoints. The proposed methodology stands out by incorporating both local and global features within a transformer network, which can assimilate comprehensive human body morphology and detailed acupoint data. To verify our approach, an extensive dataset comprising 89,951 pairs of images were applied, each annotated with acupoint labels, facilitating precise localization. This dataset integration allows our Transformer-based network to set a new precedent in acupoint recognition precision by seamlessly blending body contours with specific acupoint indicators. Preliminary experiments demonstrated that our proposed framework achieves an impressive accuracy rate surpassing 90%. This represents a significant improvement over existing state-of-the-art solutions. The notable enhancement in acupoint localization underscores the potential of our method to elevate the precision and reliability of clinical practices within TCM. In conclusion, our study demonstrated a cutting-edge approach to acupoint localization, offering promising results and paving the way for advancements in the integration of deep learning technologies into TCM clinical practices. The proposed framework's accuracy and robustness make it a valuable contribution to the field, with potential implications for improving patient outcomes and treatment efficacy.

Abstract submission # 279

Analysis of Ashi Method and Acupoint Localization Method

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After analyzing and discussing the literature materials related to the research of the origin flow of the Ashi method, it is proposed that there

is a problem of expanding the scope of use of the Ashi method. The “Ashi method” originally refers to a simple method that ordinary people without medical knowledge can also master to find parts that can relieve pain. The generalized A, the misused Ashi method, is that the method is illegal to use the acupuncture point positioning with the conventional method of taking acupuncture points, resulting in confusion between the two, the Ashi method of selecting the Ashi acupoint and the conventional acupoint location and selection method. This article introduced in detail the method of positioning and taking acupuncture points. As meridian and strange acupuncture points with fixed positions, the final position needs to be obtained through the method of taking acupuncture points on the basis of standard positioning. Due to the similarity between the operation of pressing acupuncture points and the operation of Ashi method in some aspects, if it is not carefully analyzed, it is very easy to expand the scope of use of Ashi method, which can easily lead to confusion of the understanding of the two methods of taking acupuncture points, and the application of clinical acupoints is easy to occur.

Abstract submission # 59

Analysis of Patellar Reflex in Parkinson Disease Patients after an Acupuncture Treatment Protocol—Case Series Study

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Background: The investigation of rigidity physiology in Parkinson's disease (PD) involves the examination of reflexes. Parkinsonian patients often demonstrate reduced sensitivity in polysynaptic reflexes within the leg extensor muscles, which is correlated with their postural instability. The compensatory mechanisms for impaired proprioceptive reflex function may involve alterations in intrinsic muscle stiffness. The interplay between gait and reflexes is intricately linked to the nervous system's functioning and motor control. Certain reflexes, such as patellar reflexes, play a pivotal role in maintaining walking and posture. Ensuring the integrity of these reflexes is essential for facilitating smooth and efficient walking.

Objective: To analyze the behavior of patellar reflexes in four PD patients undergoing an acupuncture treatment protocol.

Methods: This study adopted a case series design. Reflex outcomes were assessed at six different time points throughout a month-long treatment protocol using MP36, BIOPAC Systems.

Results: Positive differences were observed in cumulative effects across all patients, indicating a tendency for improvement over the long term. Nevertheless, in specific cases, there was a trend towards a reduction in the area during acute effects.

Conclusion: Our findings suggest that the acupuncture protocol may lead to a cumulative improvement in the range of motion of patellar reflexes in patients with PD. Further in-depth research, including a statistical evaluation with a larger participant pool, is necessary to validate and confirm these promising results conclusively.

Abstract submission # 207

Analysis of Status Quo of Outcome Indicators of Randomized Controlled Trials in Treatment of Polycystic Ovary Syndrome with Acupuncture

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Objective: To analyze the application and status of outcome indicators of randomized controlled trials (RCTs) of acupuncture for polycystic ovary syndrome (PCOS), with a view to providing a useful

reference for the design of acupuncture clinical studies and the construction of the core outcome set.

Methods: RCTs of acupuncture for PCOS were searched in databases, i.e., China National Knowledge Infrastructure, Wanfang, Chongqing VIP, SinoMed, PubMed, EMBASE, Cochrane Library and Web of Science from January 2018 to June 2023. By literature screening and information extraction, outcome indicators were summarized and analyzed to organize the indicator domains of acupuncture for PCOS.

Results: A total of 60 trials were included, involving 124 outcomes. The most frequently used outcome indicators are physicochemical tests (65.79%), followed by signs and symptoms (23.37%), safety events (4.02%), Chinese medical evidence (3.10%), quality of life (1.86%), long-term prognosis (1.86%), and none of the literature included indicators for health economic assessment. The status quo of outcome indicators is characterized by without discriminatively reporting primary or secondary outcomes, a wide variety of measures, trivialization of quality of life assessment, and irregular reporting.

Conclusion: At present, RCTs of acupuncture treatment for PCOS have problems such as no primary and secondary outcome indicators, non-uniform evaluation methods for the same type of outcome indicators, lack of the features of Chinese medicine and evaluation criteria of some indicators, low attention to the evaluation of quality of life in PCOS and selection of poorly targeted scales, no reports of indicators for health economic assessment, low attention to safety evaluation and non-standardized reporting of indicators. The status quo of RCT outcome indicators for acupuncture for PCOS is not conducive to pooling and comparing data and results from different trials. It is recommended to construct the core outcome set consistent with the therapeutic characteristics of TCM to improve the standardization of acupuncture clinical trial design and quality of evidence.

Abstract submission # 33

Analysis on Medicinal Plant Consumption and Its Associated Factors in Chinese Old Adults

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Objective: To understand the current status of medicinal plant consumption (MPC) among Chinese old adults and explore associated factors.

Methods: Data were obtained from the 2018 Chinese Longitudinal Healthy Longevity Survey, encompassing 15,442 individuals aged 65 and above from 23 provinces (municipalities). The study subjects completed the MPC survey along with physical measurements. Among them, 9750 were aged 80 and above, and 2825 were centenarians. Chi-square analysis and multiple logistic regression were used to analyze factors influencing MPC among the elderly.

Results: Approximately 16.3% of Chinese old adults reported occasional or frequent MPC, with a higher prevalence among males, urban residents, and younger age groups ($P < 0.001$, $P < 0.05$). Among the surveyed provinces (municipalities), Guangzhou, Shanghai, and Zhejiang ranked as the top three in the proportion of old adults reporting occasional or frequent MPC, with percentages of 40.5%, 36.1%, and 28.6%, respectively. Multiple logistic regression analysis revealed several factors positively correlated with occasional or frequent MPC, including being a centenarian, male, Han ethnicity, urban residence, middle school education or higher education, current alcohol consumption, current exercise, regular fruit intake, regular or occasional vitamin intake, regular or occasional tea consumption, obesity, and comorbidities, all positively correlated with occasional or frequent MPC among the elderly. Smoking, on the other hand, showed a negative correlation.

Conclusion: The proportion of Chinese old adults reporting occasional or frequent MPC is relatively high. However, it remains

unclear whether this is based on the unique background of traditional Chinese medicine culture or reflects the urgent demand for daily health maintenance among the elderly. Further research is essential to strengthen enhance observation, monitoring, and analysis of health outcomes, exploring the potential benefits and risks in this population.

Abstract submission # 2

Angiopuncture: A Novel Treatment for Pain Relief

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Objective: To investigate how angiopuncture therapy relieves pain in people who have had surgery. based on clinical information from individuals with postoperative discomfort.

Methods: A random selection of 41 patients was made using the included and excluded criteria. Using Doppler, the cutaneous perforator was found. As soon as the surgery was completed, an angiopuncture was performed. The level of pain both before and after angiopuncture was assessed using the Numerical Rating Scale (NRS). The paired *t*-test or Wilcoxon-signed rank test were used to evaluate all of the pre- and post-data, and additional subgroup analysis based on time was carried out.

Results: Variance analysis revealed a significant difference ($P < 0.05$) between the pre- and post-angiopuncture states. The subgroup analysis findings demonstrated that angiopuncture had a noticeable pain-relieving impact for postoperative pain patients at the time points of 6, 12, 24, 48, and 72 h ($P < 0.05$).

Conclusion: Patients with postoperative pain may benefit from the angiopuncture treatment approach to reduce pain.

Abstract submission # 216

Autism Spectrum Disorder: Non-pharmacological Treatments and Traditional Chinese Medicine

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Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by social impairment, communication disorders, cognitive deficits and repetitive behaviors. ADS reveals various manifestations across different individuals and age groups. In addition of undefined pathogenesis and incomprehensive treatment plan, ASD has led to widespread global concern. This article seeks to integrated clinical trial studies on the intervention and treatment of autism, and summarized a series of treatment programs for autism based on evidences: acupuncture and moxibustion therapy, Tuina therapy, five-sound therapy, chronotherapy, melodioterapy, and aromatherapy. The authors reviewed benefits of non-pharmacological treatment when used as complementary therapy aligned with conventional medication treatment to achieve better therapeutic effects and living standards. The results concluded with necessities and advantages of non-pharmacological treatment associated with the need for rehabilitation of increasing number of children with ADS, and followed by ideas and expectations to overcome the situation.

Abstract submission # 178

Baihui (DU20), Shenmen (HT7) and Sanyinjiao (SP6) Target the cAMP/CREB/BDNF and PI3K/Akt Pathways to Reduce Central Nervous System Apoptosis in Rats with Insomnia

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Objective: Insomnia can cause damage to function and other medical and mental illnesses, and it is also a risk factor for increasing medical care costs. Although simple behavior intervention is feasible in primary medical institutions, the lack of corresponding technical training has obviously restricted its use, patients' autonomy dependence is generally poor, and early missions have some difficulties. Relatively speaking, acupuncture in traditional therapy is more likely to be accepted, but the mechanism is still unclear.

Methods: In this study, a model of insomnia was constructed using chlorophenylalanine in 6-week-old male Sprague-Dawley rats. Electroacupuncture was used to stimulate Baihui (DU20), Shenmen (HT7), and Sanyinjiao (SP6), and the behavior, histopathology, cAMP/CREB/BDNF, PI3K/Akt pathways and the expression of sleep-related factors were observed.

Results: Our study showed that IL-1 β , PGD2, MT, IL-10, IL-6, TNF- α , IFN- γ and CORT in rats could be regulated after electroacupuncture stimulation. The expression of TrkB, PI3K, Akt, P-TrkB, p-Akt, cAMP, CREB, and BDNF can also be up- or downregulated. Apoptosis-related Bax, Bad and caspase 3, as well as the monoamine neurotransmitters 5-HT, DA, NE and EPI, were also modulated by electroacupuncture.

Conclusion: Taken together, these data illustrate the potential of DU20, HT7 and SP6 as a multitargeted therapy for insomnia in rats. The novelty of the study lies in the description of the Traditional Chinese Medicine stimulation methods different from Chinese Herbs: electroacupuncture stimulates acupoints of sleep factors, cAMP/CREB/BDNF, PI3K/Akt pathways and the multipath and multitarget body response regulation mechanism of apoptosis.

Abstract submission # 220

Capturing the Inheritance of Ancient Acupuncture Literature Using Semantic Similarities

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This study makes use of semantic similarities between text units to capture the inheritance relationships in ancient acupuncture literature. Utilizing contrastive learning methods in deep learning, the study calculates the semantic similarities between text units such as paragraphs, sentences, and phrases to characterize the inheritance relationships in ancient acupuncture literature. Ancient texts in the field of traditional Chinese medicine serve as the training corpora for both unsupervised and supervised training. In supervised training, a conceptual framework of ancient acupuncture is used as a basis to emphasize the importance of acupuncture terms within the texts in the computation of semantic similarities. Experimental results indicate that the pre-trained language model obtained through the mentioned approach accurately captures the semantic similarities in the inheritance relationships of ancient acupuncture literature and it is conducive to the profound revelation of the academic rules of ancient acupuncture.

Abstract submission # 212

CD39/CD73 Pathway in the Treated Acupuncture Points Contributed to Acupuncture Analgesia on Acute Arthritis Rats

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Objective: Adenosine signaling in the acupoints is a crucial event for triggering analgesic mechanism of acupuncture. Previous work had uncovered the accumulation of extracellular adenosine triphosphate

(ATP) in the interstitial space of the treated site. Thus, we aimed to unmask whether the CD39/CD73 pathway was involved in this issue via transiting extracellular ATP to adenosine. A comprehensive understanding of this matter will guide clinicians to optimize acupuncture manipulations to improve acupuncture effectiveness.

Methods: Acupuncture for 20 min was applied at the injured-side Zusanli acupoint (ST36) of adjuvant arthritis rats established by injecting complete Freund's adjuvant into the ankle. Pain thresholds of the affected hind paws were determined. To interfere with the targeting signals, pharmacological tools or adeno-associated viruses (AAV) were used. Human cultured keratinocytes, HaCaT cells, were irritated by hypotonic shock to simulate needling stimulation. The expression of CD39 or CD73 was determined with real-time quantitative reverse transcription polymerase chain reaction and Western blotting. The location of them was assessed with immunofluorescent labeling.

Results: Acupuncture led to a prompt analgesic effect, which was accompanied by a temporary accumulation of ATP and Adenosine. Promoting ATP hydrolysis with apyrase achieved an analogous antinociceptive effect and abolished ATP accumulation, which was reversed by suppressing ATP hydrolysis with ARL67156. Specific antagonism at CD39 (ticlopidine) or CD73 (AMP-CP), or AAV interferences hindered acupuncture analgesia. Acupuncture increased CD73 expression but decreased CD39 expression. Immunofluorescent labeling showed both of them expressed on the keratinocyte layer. When irritated by hypotonic shock, the keratinocytes in vitro showed higher mobilization of extracellular ATP and adenosine. The conversion between them was impaired by suppressing CD39 with ARL67156 or CD73 with AMP-CP.

Conclusion: CD39/CD73 pathway-mediated extracellular ATP hydrolysis at acupoints contributes to the initiation mechanism of acupuncture analgesia via triggering adenosine signaling.

Abstract submission # 155

CD39-P2Y2Rs Axis in the Sciatic Nerve Contributes to Acupuncture at Zusanli (ST36)-induced Analgesia in Ankle Arthritis Rats

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Objective: The efficacy of acupuncture at Zusanli (ST36) in alleviating lower-limb pain is widely acknowledged in clinical practice, while its underlying mechanism remains incompletely elucidated. Our previous research revealed that prompt analgesia induced by acupuncture at ST36 was accompanied with alterations in the expression of certain exonucleotidase within the sciatic nerve. Building upon this finding, the current work focused on the role of CD39, the primary ectonucleotidase in the human body, which converts adenosine triphosphate (ATP) into adenosine monophosphate (AMP).

Methods: A 20-minute acupuncture was administered unilaterally at the ST36 on rats with acute ankle arthritis. The pain thresholds of the affected hind paws were determined. Pharmacological interference was carried out by introducing the corresponding reagents to the sciatic nerve. Live calcium imaging, utilizing the Fura 2-related-F₃₄₀/F₃₈₀ ratio, was conducted on excised nerves and cultured rat Schwann cells and RSC96 cells.

Results: The prompt analgesic effect induced by acupuncture at ST36 was observed. This effect was impaired when CD39 was inhibited with ARL67156 or ticlopidine. Conversely, increasing CD39 activities with apyrase duplicated the acupuncture effect.

Unexpectedly, impeded ATP hydrolysis ability and diminished CD39 expression were observed in the treated group. Furthermore, agonism at purinergic receptor P2Y₂ (P2Y₂R) with ATP, uridine triphosphate (UTP), or INS365 resulted in antinociception. Conversely, antagonism at P2Y₂Rs with suramin or AR-C118925xx prevented acupuncture analgesia. Immunofluorescent labeling demonstrated that acupuncture potentiated the sciatic nerves to express P2Y₂Rs, and both CD39 and P2Y₂Rs were expressed on Schwann cells. Suppression this type of cells with antagonism at erbB receptors prevented acupuncture analgesia. Additionally, living imaging on the excised nerves or cultured showed that agonism at P2Y₂Rs indeed led to [Ca²⁺]_i rise in Schwann cells.

Conclusion: These findings strongly suggest that CD39 activities in the sciatic nerve contribute to the analgesic mechanism of acupuncture at ST36, which assists in the activation of P2Y₂R by providing an appropriate ATP milieu.

Abstract submission # 28

Changes in the Amygdala following Electroacupuncture in a Mouse Model of Comorbid Pain and Depression: Evidence from a Functional Magnetic Resonance Imaging Study

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Comorbid pain and depression are common in clinical practice but remain difficult to treat. Electroacupuncture (EA) can effectively improve symptoms of depression and relieve pain, but its neural mechanism is unclear. Using a mouse model of chronic depression and pain established by constricting the infraorbital nerve (CION), the present study used rest-state functional magnetic resonance imaging (Rs-fMRI) to detect cerebral changes after treating the CION mice with EA at the acupoints GV20 and ST36. We found that 10 d of EA treatment could relieve pain and rescue depression-like behaviors in CION mice. EA treatment downregulated the amplitude of low-frequency fluctuations (ALFF) and regional homogeneity (ReHo) values enhanced by comorbid pain and depression in brain regions including the amygdala, hippocampus, and cerebral cortex. Selecting the amygdala as the seed region, we found that the functional connectivity (FC) was higher in the CION group than in the control group. EA treatment could decrease the FC between the amygdala and other brain regions including the caudate putamen, thalamus, and parts of the cerebral cortex. Furthermore, EA prevented the shrinkage of the amygdala. Our study provides evidence for the effectiveness of EA in the treatment of comorbid pain and depression, and establishes a framework for analyzing ALFF and ReHo in animal models of CION. Specifically, we identified disrupted connectivity patterns in various brain regions that were subsequently restored through CION and could be reversed by EA treatment. By using fMRI, our findings help to elucidate the neurobiological mechanisms of EA treatment by capturing its effects at the whole-brain level.

Abstract submission # 94

Characteristics and Quality of Clinical Practice Guidelines Involving in Traditional Chinese Therapies/Integrative Medicine in Musculoskeletal Diseases Published in China's Mainland

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Objective: Musculoskeletal diseases are prevalent in adults. Traditional Chinese medicine (TCM) and integrative medicine (IM) are commonly used in clinical practice. To understand their recommendations in clinical practice guidelines (CPGs), we analyzed

the characteristics and quality of TCM/IM CPGs on musculoskeletal diseases.

Methods: We conducted systematic searches on CPGs which recommended TCM/IM therapies in musculoskeletal diseases published in Chinese or English between Jan2018 to Dec2022 in China's mainland and analyzed the information including the guideline classification, funding source, conflict of interest and methodology. We applied Appraisal of Guidelines for Research and Evaluation (AGREE II), a guideline appraisal instrument which included 6 domains, to assess CPGs quality.

Results: Fifty guidelines were included, which involved 19 TCM guidelines, 5 IM guidelines and 26 Western conventional medicine (WCM) guidelines (35.1% of 74 WCM guidelines). The top 3 focused conditions of included guidelines were osteoporosis (13, 26%), osteoarthritis (11, 22%) and rheumatoid arthritis (6, 12%). And top 3 TCM therapies recommended by the guidelines successively were acupuncture and moxibustion, Chinese patent medicine and TCM decoction based on syndrome differentiation. Nearly half of the guidelines reported funding source and interest conflict (52% and 48% respectively). Thirty-six guidelines used Grading of Recommendations Assessment, Development, and Evaluation method, and others did not report method. Based on AGREE II scores, domain "clarity of presentation" scored highest (55.36%), while domain "applicability" lowest (6.04%). No CPG was evaluated as level A (directly recommended without any changes), and 23 CPGs were evaluated as level C (not recommended).

Conclusion: The quality of musculoskeletal diseases guidelines in China is generally low. Future guidelines should pay more attention to standardized developing procedures, strengthening applicability and publicity.

Abstract submission # 34

Characteristics of Acupuncture Points Based on Pattern Identification in Pain Disorders: A Retrospective Study of Outpatients in Korean Medicine Clinics

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Objective: Acupuncture points are selected based on clinical symptoms and pattern identification in traditional East Asian medicine. Since pattern identification includes information about one's holistic inclination, clinical characteristics of acupuncture points can be inferred by assessing the relationship between them. We conducted a retrospective study of outpatients in Korean medicine clinics, to explore the characteristics of acupuncture points particularly focusing on "Excess and Deficiency (Exc-Def)," "Cold and Heat (Cold-Heat)," and "Dryness and Dampness (Dry-Damp)" patterns.

Methods: From the clinical records of 423 patients with diverse pain disorders, the levels of Exc-Def, Cold-Heat, Dry-Damp patterns, along with the corresponding acupuncture points chosen for treatment, were collected and analyzed. The levels of three patterns were evaluated to a numerical scale (−5 to 5) by 7 Korean medical doctors, wherein lower values indicate deficiency, coldness, and dryness. For the thirty frequently used acupuncture points, the levels of the three patterns were summarized, and hierarchical clustering analysis was employed.

Results: In the Dry-Damp pattern, there was an overall tendency toward dampness rather than dryness in patients with pain. Additionally, the pattern of Cold-Heat showed a neutral distribution among acupuncture points. While patterns of Exc-Def differed between acupuncture points, two clusters were identified. One cluster includes acupuncture points BL66, LR8, GB39, SP6, LU8 and demonstrates deficient patterns (Exc-Def = −0.394, Cold-Heat = −

0.250, Dry-Damp = 0.370). Another cluster encompassing BL60, KI3, BL62, GB40 displayed excessive patterns (Exc-Def = 0.525, Cold-Heat = 0.267, Dry-Damp = 0.722).

Conclusion: The present study revealed the characteristic of acupuncture points used for pain control regarding holistic features such as Exc-Def, Cold-Heat, and Dry-Damp patterns. These findings, obtained from the records of Korean medicine clinics, may suggest practical implications for the selection of acupuncture points in real-world settings.

Abstract submission # 156

Characteristics of Multi-omics of Chinese Medicine Body Constitution Susceptible to Neurocognitive Disorders among Macau Elderly Individuals

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Objective: Due to the increase of the ageing population, neurocognitive disorders (NCDs) have been a global public health issue and its prevention and early diagnosis are crucial. As a comprehensive assessment of an individual's morphological structure, physiological function and psychological status, Chinese medicine (CM) body constitution plays an important role in the onset and development of susceptible diseases. Our previous study demonstrated there is a significant correlation between the yin-deficient constitution of CM and NCDs, but the biological characteristics of the constitution susceptible to NCDs are unclear. In this study, we investigated the features of multi-omics in the yin-deficient constitution.

Methods: Multi-omics approaches, including metagenomics, metabolomic and proteomic, were used to detect gut microbiota, faecal metabolites and urine exosome of healthy and yin-deficient constitution elders. The multi-omics data were analyzed using R and Bioconductor. The two-sided Wilcoxon's rank-sum test, Kruskal-Wallis (KW) rank sum and the linear discriminant analysis effective size method test were performed to identify characterized features. Moreover, a two-year follow up was conducted to evaluate their cognitive function change.

Results: Compared with the healthy elders, the metagenomics of gut microbiota showed that *Ruminococcus gnavus*, *Lachnospira eligens*, *Escherichia coli*, and *Desulfovibrio piger* increased significantly in the elders with yin-deficient constitution. Carboxylates, like α -ketoglutaric acid and D-saccharic acid, and levels of vitamins had obvious differences in the faecal metabolites. There was a distinct decrease in the expression of eukaryotic translation initiation factor 2 subunit 1 and amine oxidase A according to the proteomic result of the urine exosome. Moreover, the compound annual growth rate of neurocognitive scores was significantly decreased, even negative growth in elders with yin-deficient constitution.

Conclusion: Multi-omics characteristics of yin-deficient constitution present glyoxylate and dicarboxylate metabolism, vitamin digestion and absorption and tricarboxylic acid cycle cycle, which are perhaps regarded as diagnostic elements of susceptibility to NCDs and therapeutic targets.

Abstract submission # 53

Chinese Herbal Medicine Decoctions for Primary Dysmenorrhea Pain Relief: A Pairwise and Network Meta-analysis of Randomized Controlled Trials

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Objective: This study aimed to determine the comparative effects and safety of Chinese herbal medicine (CHM) decoctions for pain relief in patients with primary dysmenorrhea (PD).

Methods: This systematic review adopted pairwise and network meta-analysis. Two reviewers independently screened studies, extracted data, and assessed risk of bias and confidence in the evidence. We included randomized controlled trials (RCTs) that compared CHM decoctions with Western medicine, placebo, or another type of CHM decoction. We searched 10 databases from inception to August 20, 2023. The surface under the cumulative ranking curve was used to estimate the probability ranking for intervention effects.

Results: Fifty-seven RCTs involving 5140 participants and 10 interventions were included. Twenty-two RCTs were rated as low risk of bias. Conceptual heterogeneity and inconsistency were low across the network. Compared with placebo, significantly better effects were found in Gegen Decoction (GGD) (standardized mean difference [SMD] = -4.57, 95% CI [-5.88, -3.25]), modified Xuefu Zhuyu Decoction (MXFZYD) (SMD = -4.40, 95% CI [-6.63, -2.16]), modified Xiangsha Liujunzi Decoction (MXSLJZD) (SMD = -3.67, 95% CI [-5.88, -1.47]), Danggui Sini Decoction (DGSND) (SMD = -3.45, 95% CI [-5.35, -1.55]), modified Wenjing Decoction (MWJD) (SMD = -3.12, 95% CI [-4.67, -1.48]), Shaofu Zhuyu Decoction (SFZYD) (SMD = -3.09, 95% CI [-4.44, -1.73]), modified Siwu Decoction (MSWD) (SMD = -2.21, 95% CI [-3.89, -0.44]), and Western medicine (SMD = -2.00, 95% CI [-3.50, -0.50]) for pain intensity. Huangqi Jianzhong Decoction (HQJZD) was statistically significant in improving overall PD symptoms than MWJD (SMD = 3.74, 95% CI [0.69, 6.80]), DGSND (SMD = 3.76, 95% CI [0.58, 6.94]), SFZYD (SMD = 3.79, 95% CI [0.73, 6.86]), MSWD (SMD = 3.89, 95% CI [0.84, 6.95]), MXFZYD (SMD = 3.90, 95% CI [0.79, 7.01]), SND (SMD = 4.08, 95% CI [0.26, 7.90]), DGSYD (SMD = 4.35, 95% CI [1.19, 7.52]), and Western medicine (SMD = 5.32, 95% CI [2.29, 8.35]).

Conclusion: CHM decoctions generally showed better effects on relieving PD pain than Western medicine and placebo. GGD and HQJZD demonstrated the highest probability ranking in pain intensity and overall PD improvements, respectively.

Trial registration: PROSPERO identifier No. CRD42023450933.

Abstract submission # 127

Chinese Herbal Medicine for Patients Living with HIV in Guangxi Province, China: A Propensity Score Matching Analysis of Real-World Data

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Objective: From 2004, the Chinese government has freely offered complimentary Chinese herbal medicine (CHM) to Chinese human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) patients, alongside the prescribed first line therapy of highly active antiretroviral therapy (HAART). We aimed to explore the effectiveness and safety of CHM for patients with HIV/AIDS.

Methods: Data from the Guangxi pilot database (The Guangxi Pilot Database of the National Free CHM HIV/AIDS treatment programme) and antiviral treatment sites database (Ruikang Hospital affiliated with the Guangxi University of Traditional Chinese Medicine) have been respectively developed into two datasets, the CHM combined HAART group (the integrated group) and the HAART group. A 1:1 propensity score matching (PSM) was performed and the longitudinal data were analyzed using a generalized estimating equation (GEE) model.

Results: A final sample of 629 patients were obtained from the full dataset. Following PSM, 166 pairs from the full dataset were matched successfully, with 98 pairs in the baseline $CD4^+ > 200$ subgroup, and 55 pairs in the baseline $CD4^+ \leq 200$ subgroup. In the full dataset, the HAART group achieved higher $CD4^+$ count (odd ratio [OR] = 1.119, 95% confidence interval [CI] [1.018, 1.230]) and $CD4^+/CD8^+$ ratio (OR = 1.168, 95% CI [1.045, 1.305]) than the integrated group, so did in the $CD4^+ > 200$ subgroup. For the $CD4^+ \leq 200$ subgroup, the $CD4^+$ (OR = 0.825, 95% CI [0.694, 0.980]) and $CD4^+/CD8^+$ ratio (OR = 0.826, 95% CI [0.684, 0.997]) of the integrated group were higher than those of the HAART group. The safety outcomes showed that there were no significant differences in blood urea nitrogen, alanine transaminase and aspartate aminotransferase levels between the groups, but significantly higher level creatinine in the HAART groups of all three datasets.

Conclusion: Compared to HAART alone, CHMs combined with HAART had better effects in improving the immune function of HIV/AIDS in patients with baseline $CD4^+$ count ≤ 200 . The results of the two subgroups are in opposite directions, and chance does not explain the apparent subgroup effect. A study with larger sample size and longer follow-up period is warranted to increase study credibility.

Abstract submission # 276

Clinical Application of Facial Acupuncture

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Facial acupuncture refers to the acupuncture method of treating diseases through the acupuncture of specific points on the face, it utilizes the connection between the face and the corresponding internal organs and limbs. When a certain internal organ or certain parts of the limb are sick, there may show abnormal changes in the corresponding parts of the face, which can be treated by acupuncture. By unblocking the meridians and collaterals of the face, harmonizing qi and blood, activating blood circulation and removing blood stasis, and regulating the local and whole body as a whole. Facial acupuncture therapy has significant therapeutic effects on facial paralysis, dry eye syndrome, tinnitus, acne, and chloasma. Facial acupuncture therapy takes fewer acupuncture points and makes less irritations, and is easy to accept, effective and safe, with clinical application value. Due to the special area of the head and face, it has led to the accelerated research and development of face-specific needles and clinical technical specifications. Simultaneously preparations are underway for the establishment of the Facial Acupuncture Professional Committee of Chinese Acupuncture and Moxibustion Society, promoting appropriate technology for facial acupuncture and continuing education training for technicians.

Abstract submission # 242

Clinical Experience of Acupuncture in the Treatment of Spasmodic Torticollis

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Spasmodic torticollis, classified as an extrapyramidal disorder, manifests as intermittent or sustained involuntary contractions of neck muscles, resulting in the twisting or episodic tilting of the head to one side. It is categorized as a localized disorder of muscular tension. In the realm of traditional Chinese medicine (TCM), it is referred to as “nodding wind” or “head-shaking wind,” falling within the categories of “spasm syndrome” and “sinew diseases.” Currently, there is no specific and efficacious Western medical treatment for this condition; TCM primarily utilizes acupuncture and herbal interventions. The

authors postulated that the pathogenesis of this condition is linked to marrow sea insufficiency caused by external factors such as the six climatic evils and internal factors including emotional disturbances from the seven emotions. This results in an essence deficiency, loss of spiritual utility, inadequate nourishment of qi and blood, and neglect of tendons and vessels. Consequently, the primary clinical manifestations involve rapid tendon spasms, with liver depression and blood deficiency serving as the foundational etiology. As articulated in the *Yellow Emperor's Inner Canon*, “Yang qi, when essence is abundant, nourishes the spirit; when soft, it nourishes the tendons.” Therefore, the therapeutic approach encompasses a holistic perspective, addressing both spiritual and tendinous aspects, targeting symptoms and underlying causes alike. Techniques involving spirit regulation, stagnation resolution, tendon opening, and obstruction dispersal are employed. The application of dynamic acupuncture, coupled with electroacupuncture, in the management of spasmodic torticollis has demonstrated favorable outcomes.

Abstract submission # 92

Clinical Observation of 153 Cases of Nerve Root Type Cervical Spondylosis Visual by Prone Position Cervical Vertebra Pulling Method

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Objective: To study the clinical effect of prone position cervical vertebra pulling method in the treatment of nerve root type cervical spondylosis.

Methods: From April 2013 to October 2014, 153 patients with nerve root type of cervical spondylosis were randomly divided into experimental group (79 cases) and control group (74 cases). In the experimental group, prone position cervical vertebra pulling method was manipulated once a day for 2 weeks. In the control group, traction method was manipulated twice a day for 2 weeks. Then the clinical effect, visual analog score and somatosensory evoked potentials were analyzed after treatment.

Results: After treatment for 2 weeks, the authors found that the clinical effects, visual analog score and somatosensory evoked potentials were better, the improvement in the experimental group was higher than that of control group, and the differences between two group was statistical significance.

Conclusion: Prone position cervical vertebra pulling method was a simple, safe, effective manipulation, can relieve the symptoms of cervical spondylosis.

Abstract submission # 284

Clinical Observation of Acupuncturing at Siguan Points Combined with Daoyin in Treating Delayed-onset Muscle Soreness

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Objective: To explore the clinical efficacy of acupuncturing at Siguan points (Hegu [LI4] and Taichong [LR3]) combined with Daoyin in treating delayed-onset muscle soreness (DOMS) and to preliminarily study its intervention mechanism.

Methods: A total of 36 eligible subjects were recruited and included and assigned to observation, cold therapy, and model groups by random number table method, with 12 cases in each group. DOMS was induced by frog jumping exercise. The observation group was treated with acupuncturing at Siguan points combined with limb and respiratory Daoyin, while the cold therapy group was treated with cold therapy intervention. Starting from 24 hours after exercise, the corresponding treatment was given once a day for a total of three times. The subjects' visual analogue score (VAS), pain threshold, serum creatine kinase (CK), lactic dehydrogenase (LDH), interleukin-

6 (IL-6), and β -endorphin (β -EP) were tested to evaluate the clinical efficacy and explore its effect mechanism.

Results: (1) Compared with the model group, there was no statistically significant difference with VAS scores of the observation group and the cold treatment group ($P > 0.05$); however, VAS scores in the observation group and the cold treatment group after treatment were lower than those before treatment and the difference was statistically significant ($P < 0.05$). (2) Seventy-two hours after exercise, the pain threshold of observation group was higher than that of the model group, with a statistically significant difference ($P < 0.05$); compared with that before treatment, the pain threshold of the observation group and the cold treatment group increased after the first treatment, and the difference was statistically significant ($P < 0.05$). (3) Compared with model group and cold therapy group, the CK content in the observation group decreased significantly at 24, 48, and 72 h after exercise ($P < 0.05$); compared with the model group and the cold therapy group, the LDH content in the observation group decreased at 24 and 72 h after exercise, and the difference was statistically significant ($P < 0.05$); compared with the model group, the IL-6 content in the observation group decreased at 72 h after exercise, with a statistically significant difference ($P < 0.05$); compared with the model group, the β -EP content in the observation group decreased at 24 and 48 h after exercise, and the difference was statistically significant ($P < 0.05$).

Conclusion: Acupuncture at Siguan points combined with Daoyin can relieve symptoms of DOMS, especially in relieving immediate pain, raising pain threshold, and alleviating the suffering, with better effects than cold treatment group. The intervention can regulate the blood CK level after DOMS and downregulate the content of IL-6, B-EP, and LDH, so as to achieve the effects of anti-inflammation, relieving pain, regulating the level of body stress response, and promoting local damage repair.

Abstract submission # 183

Clinical Observation of Xinshao Qiteng Decoction for the Prevention and Treatment of Oxaliplatin-induced Peripheral Neurotoxicity

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Objective: To observe the preventive and therapeutic effects of external use of Xinshao Qiteng Decoction on oxaliplatin-induced peripheral neurotoxicity.

Methods: A total of 60 patients with gastric cancer or colorectal cancer and received oxaliplatin chemotherapy in Peking University Cancer Hospital from July 2019 to December 2022 were selected as the study objects and randomly divided into control group and observation group, with 30 cases in each group. During chemotherapy, patients in the control group were treated with routine prevention measures, and the observation group are treated with Xinshao Qiteng Decoction to soak hands and feet on the basis of routine prevention measures of the control group. The treatments were started from the afternoon before chemotherapy, twice a day for 30 min each time for 7 consecutive days. After treatment, we observed the grading of peripheral nerve adverse reactions, degree of peripheral nerve adverse reactions (by EORTC QLQ-CIPN 20 scale scores, and CTCAE 5.0), evaluated the MDASI-TCM performance score, Eastern Cooperative Oncology Group (ECOG) score and related indicators (hemoglobin, blood calcium, blood magnesium, and blood sugar).

Results: After the 3 cycles of treatment, the incidences of grade 2 and 3 peripheral sensory and motor neuropathy in the treatment group were significantly lower than those in the control group, and the score of EORTC QLQ-CIPN 20 scale in the treatment group was significantly lower than that in the control group, and the differences between the two groups being statistically significant ($P < 0.05$ or $P < 0.01$). The ECOG score of the treatment group was higher than that

of the control group, but the difference was not statistically significant ($P > 0.05$). The total effective rates for MDASI-TCM performance score in the treatment group and the control group were 77.80% and 42.90%, respectively, and the differences between the two groups were statistically significant ($P < 0.05$).

Conclusion: External use of Xinshao Qiteng Decoction can effectively prevent and treat oxaliplatin-induced neurotoxicity and improve MDASI-TCM performance score, but has no effect on improving the daily living ability of patients.

Abstract submission # 200

Clinical Observation on Therapeutic Effect of Electroacupuncture Combined with Diclofenac Sodium in Treatment of Acute Gouty Arthritis: A Randomized Controlled Study

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Objective: To observe the clinical effect of electroacupuncture (EA) combined with diclofenac sodium (DS) in the treatment of acute gouty arthritis (AGA).

Methods: Patients with AGA were randomly divided into three groups: the EA+ DS treatment group (i.e., EA+ DS group), the low-dose DS treatment group (i.e., low-dose DS group), and the conventional-dose DS treatment group (i.e., conventional DS group). Patients in the low-dose DS group took 50 mg of DS sustained-release capsules once a day. Patients in the conventional DS group took 100 mg of DS sustained-release capsules once a day. Patients in the EA+ DS group were treated with EA three times in 7 d combined with 50 mg of DS sustained-release capsules once a day. For all three groups, 7 d were regarded as a course of treatment. Outcome indicators included pain visual analog scale (VAS), joint tenderness, joint swelling and activity limitation, levels of inflammatory indicators (C-reactive protein [CRP]/white blood cells [WBC]/percentage of neutrophils [NE%]), level of serum uric acid (SUA), gout impact scale (GIS), and frequency of adverse reactions.

Results: After a course of treatment, indicators regarding the VAS, joint tenderness, joint swelling, activity limitation, GIS, inflammatory indicators (CRP/WBC/NE%), and SUA were all improved ($P < 0.05$) with no adverse reactions in the EA + DS group. The EA + DS group performed better than the low-dose DS group in improving indicators regarding VAS, joint tenderness, activity limitation, GIS, inflammatory markers (WBC/NE%), and SUA ($P < 0.05$). Similarly, the EA + DS group performed better than the conventional DS group in improving indicators regarding GIS, SUA, and adverse reactions ($P < 0.05$).

Conclusion: EA combined with DS can improve AGA patients' joint pain and functional status, thus improving their quality of life. Moreover, this combined treatment can reduce inflammatory markers and SUA levels, leading to fewer adverse reactions in AGA patients.

Abstract submission # 270

Combining Acupuncture and Acupressure for Community-dwelling Elderly with Dementia: Study Protocol for an Assessor-blinded, Randomized Controlled Trial

Mei Yan Chan, Kwai Ching Lo, Wai Chi Chan, Lei Li, Zhang-Jin Zhang

The University of Hong Kong, China

Objective: Dementia is the major cause of disability in elderly, posing a significant burden on caregivers and the healthcare system. Previous studies have proved the effectiveness of acupuncture and acupressure in alleviating cognitive deterioration. This study aims to examine the

efficacy and safety of acupuncture, acupressure, and a combination of both for community dwelling elderly with dementia.

Methods: This is a protocol of a randomized, controlled, assessor-blinded clinical trial. About 248 eligible subjects will be randomly assigned to 4 groups, i.e., comprehensive acupuncture therapy (CAT) group, “Comfy Acupressure for the Elderly (CAE)” group, CAT + CAE group and routine care group, at a ratio of 1:1:1:1. All participants will continue their routine care, while subjects assigned to CAT, CAE, or CAT + CAE groups will additionally receive 2 sessions of electroacupuncture, 3 sessions of acupressure, or both weekly for 12 weeks. The primary outcome is the baseline-to-endpoint change in score of the Montreal Cognitive Assessment (MoCA). Secondary outcome measures include digit span test, Bathel index (BI), visual analogue (VA), Geriatric Depression Scale (GDS), insomnia severity index (ISI), and adverse events.

Discussion: This trial will expand our knowledge of the feasibility, efficacy and safety of CAT and CAE combined therapy for dementia elderly to improve cognitive deterioration.

Ethics: It has been approved by the Institutional Review Board of the University of Hong Kong/Hospital Authority Hong Kong West Cluster (UW 19-821).

Trial registration: ClinicalTrials.gov identifier No. NCT04305951.

Abstract submission # 42

Comparative Effectiveness and Safety of Chinese Medicine Belly Button Application for Childhood Diarrhea: A Bayesian Network Meta-analysis of Randomized Controlled Trials

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Objective: Chinese medicine belly button application (CMBBA) has been used to treat childhood diarrhea (CD) in several randomized controlled trials (RCTs), but its effectiveness and combination strategy still need to be clarified. Therefore, we aimed to evaluate the effectiveness, safety, and the optimal combination strategy of CMBBA in treating CD.

Methods: Up until January 2023, we searched for studies that met our inclusion criteria in six databases, including PubMed, the Cochrane Library, Chinese SinoMed, CNKI, VIP, and Wanfang. Heterogeneity was quantified using I^2 statistics. A methodological evaluation was performed using the Cochrane Risk Bias Tool 2.0. The confidence in Network Meta-Analysis online software was employed to evaluate evidence grading. A minimally contextualized framework was used to provide a comprehensive conclusion for the network meta-analysis.

Results: We analyzed data from 33 RCTs that included 4490 children with diarrhea. In terms of clinical effectiveness, CMBBA plus montmorillonite powder plus anti-infectives may be the most effective treatment option for children with diarrhea and concurrent infection according to a minimally contextualized framework. Either exclusive use of CMBBA or CMBBA in combination with modern medicine was beneficial in reducing the time to diarrhea disappearance (MD = -1.33 d, 95% CI: -1.59 to -1.08, $Z = -10.103$, $P < 0.001$) compared to modern medicine exclusively, and the difference was statistically significant. The combined usage of CMBBA could shorten the recovery time of dehydration by an average of 0.74 d (MD = -0.74 d, 95% CI: -1.10 to -0.37, $Z = -3.931.103$, $P < 0.001$). While some studies have reported mild

allergic reactions and mild abdominal pain after CMBBA use, these symptoms can be cured in a relatively short period of time.

Conclusion: The combination of CMBBA, montmorillonite powder, and anti-infectives may provide superior clinical effectiveness for children with diarrhea and concurrent infection. To treat CD, CMBBA can be used effectively and safely. However, the findings must be interpreted with cautiously due to the limited number of clinical trials and the low quality of the studies.

Abstract submission # 80

Comparison of the Effects of Moxibustion versus Sham Moxibustion: A Systematic Review and Meta-analysis

Tae-Young Choi

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Objective: Moxibustion is a traditional Chinese medicine therapy that involves burning mugwort specific acupuncture points. Several studies have been conducted on the effectiveness of moxibustion for various health conditions. However, there is ongoing controversy regarding its efficacy when compared to sham moxibustion. This systematic review aimed to assess the impact of moxibustion through sham-controlled randomized trials, providing a comprehensive evaluation of its therapeutic effects.

Methods: We conducted 11 databases for randomized controlled trials (RCTs) on December 2023 to screen moxibustion trials using sham-moxibustion for any conditions. Study selection, data extraction and assessment were performed independently by two researchers. The risk of bias was assessed using the Cochrane risk of bias tool. The quality of evidence for estimates was evaluated using the Grading of Recommendations, Assessment, Development, and Evaluations (GRADE) approach.

Results: Twenty-nine RCTs ($n = 2607$ participants) were included. Sham moxibustion was classified into two types, non-acupoint and device provided insulation from the heat. RCTs included 12 conditions in the following: cancer-related symptoms ($n = 7$), knee osteoarthritis ($n = 4$), irritable colon syndrome ($n = 3$), allergic rhinitis ($n = 3$), rheumatoid arthritis ($n = 2$), cervical spondylosis ($n = 2$), gastritis ($n = 2$), labor pain ($n = 2$), functional constipation ($n = 1$), ankylosing spondylitis ($n = 1$), low back pain ($n = 1$), and fatigue ($n = 1$). Moxibustion significantly improved pain severity compared to sham-controlled for musculoskeletal disorders.

Conclusion: This systematic review provided evidence supporting the efficacy of moxibustion in cancer-related symptoms and knee osteoarthritis based on sham-controlled RCTs. However, the overall quality of the included studies and the potential for publication bias should be cautiously interpreted. Further well-designed RCTs with rigorous methodology are needed to validate and refine these findings, contributing to a better understanding of moxibustion's therapeutic potential and its role in contemporary healthcare practices.

Systematic review registration: The systematic review was registered in PROSPERO with No. CRD42019140275.

Abstract submission # 86

Comprehensive Onboarding Questionnaires: Their Ability to Improve Clinical Outcomes and their Potential to Refine Pattern Symptom Lists

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It appears to the author that institutions around the world train Oriental medicine (OM) practitioners using lists of symptoms ascribed to diagnostic patterns exclusively drawn from classics, textbooks, or other forms of expert opinion. Expert opinion has been identified as the lowest form of evidence. To improve scientific rigor in our profession, some form of validation of this key area of practice needs to be attempted. The utilisation within clinical registries that

support OM practitioners of a standardised, Comprehensive Onboarding Questionnaire (COQ) that could filled out by patients prior to their initial appointment and at the conclusion of a treatment cycle has many potential benefits that extend from individual clinicians to our profession in general. Practitioners sometimes, due to time restraints, ask a reasonably short number of questions to confirm their diagnosis, apart from identifying the patient's key symptoms of their patients. A COQ that scores of each symptom with 0–10 Likert scales could be a very useful and clinically efficient means for identifying other pressing issues that might be missed and therefore not addressed during treatment. From a profession-wide perspective, artificial intelligence analysis of large COQ data provides an opportunity to identify correlations between patient symptoms and practitioner diagnostic pattern judgements. COQs will likely validate the question lists universally associated with each diagnostic pattern, but these data may potentially lead to new associations being uncovered and/or lead to a refining of the lists used to identify each pattern. COQ data obtained at the conclusion of treatment cycles may validate treatment effectiveness for symptoms, some even some not usually associated with interventions, thereby identifying new treatment approaches. More COQ benefits and exciting possibilities when used in conjunction with OM clinical registries will be also touched upon in this presentation.

Abstract submission # 204

Comprehensive Therapy of Abdominal Acupuncture and Rehabilitation Training for Lower Back Pain with Pelvic Floor Dysfunction

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Low back pain caused by pelvic floor dysfunction is one of the hotspots of clinical research in recent years, which is common in postpartum and elderly women. The patients mainly suffer from pregnancy or aging, which leads to pelvic floor muscle relaxation, dysfunction and lumbosacral pain. This paper analyzed the mechanism of pelvic floor dysfunction on nonspecific low back pain, and proposes a comprehensive therapy of abdominal acupuncture and rehabilitation training for low back pain caused by pelvic floor dysfunction. From the perspective of skeletal and muscle physiological memory, movement reinforcement and comprehensive regulation, the abdominal acupuncture treatment and pelvic floor rehabilitation training methods were studied. The clinical efficacy and safety of the comprehensive therapy were comprehensively evaluated by traditional Chinese medicine qi deficiency syndrome score, syndrome efficacy judgment, visual analogue scale, Japanese Orthopaedic Association Scores, as well as Oswestry disability index. The study indicated that abdominal acupuncture and rehabilitation training is a simple and easy treatment method for improving low back pain caused by relaxed pelvic floor dysfunction, which can effectively reduce the intensity of low back pain and significantly shorten the treatment course.

Abstract submission # 248

Considering Worldview in East Asian Medicine Education

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The past 20 years have seen an exponential increase in acupuncture research published in modern science journals. Acupuncture research

education in the United States has also seen some changes, but the problem was lack of resources and consistency in curriculum. At the Society of Acupuncture Research (SAR) international meeting in 2019, a pre-conference workshop for acupuncture educators resulted in the formation of the SAR Special Interest Group-Education (SIG-Edu), comprising 30 educators and administrators from approximately 18 acupuncture schools. Stemming from this meeting we completed and published a few products including a model research curriculum for schools to use, and collated feedback from subject matter experts and stakeholders. One topic that was repeatedly brought up by experts and stakeholders is the importance of worldview. Different medical systems may have different ways of looking at health, disease, and healing. Acupuncture students in the United States often come to acupuncture training due to their belief in the strengths of an Eastern worldview. This potentially prejudices them against Western scientific research. Directly addressing the fact that different worldviews exist can help researchers, educators, and clinicians to better communicate with each other and ultimately provide more coherent care for patients. This abstract shared the coded data on worldview offered by our subject matter experts and stakeholders, along with solutions from the literature aimed at improving student receptivity and interest in scientific research as it relates to East Asian medicine.

Abstract submission # 173

Construction of Ancient acupuncture and Moxibustion Medical Case Indexing Template Based on Knowledge Element Theory

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Ancient acupuncture and moxibustion books are valuable wealth of traditional Chinese medicine. Ancient acupuncture and moxibustion medical records not only have historical value, but also have important clinical significance. However, since acupuncture and moxibustion technology pays more attention to technical operation and clinical experience than traditional Chinese medicine, and most doctors are busy at ordinary times, many acupuncture and moxibustion medical records are spread only in fragmented form, and it is not convenient to systemize and study them only by using traditional Chinese medicine philology research methods. Indexing is the process of giving literature retrieval marks according to the information content and some appearance characteristics of literature. The large-scale indexing of ancient acupuncture and moxibustion medical records is the key basic work of using computers to sort out and mine them. However, how to sort out and study ancient acupuncture and moxibustion medical records and build systematic and high-quality information resources of acupuncture and moxibustion medical records is still unclear. The introduction of the knowledge element theory has deepened the control unit of knowledge from literature to knowledge granularity. This project plans to introduce the knowledge element theory into the field of digital mining of ancient acupuncture and moxibustion medical records, comprehensively adopt the philological research methods, the research methods of ancient book digitization based on knowledge element and semantic analysis methods; to explore the metadata attributes and relationships on the basis of fully understanding the dominant structure of ancient acupuncture and moxibustion medical records; to construct a fine-grained indexing template based on the knowledge element theory for the indexing of ancient acupuncture and moxibustion medical records, so as to guide the ancient book digital researchers to conduct in-depth indexing, and provide help for acupuncture and moxibustion theory mining and clinical diagnosis and treatment.

Abstract submission # 189**Construction of Knowledge Graph Based on Literature Data—Taking the Treatment of Diabetic Peripheral Neuropathy with Traditional Chinese Medicine as an Example**

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Objective: To systematically sort out the knowledge framework and conceptual logic relationship of “disease-syndrome-treatment-prescription-medicine” in the existing literature on traditional Chinese medicine (TCM) treatment of diabetic peripheral neuropathy (DPN), to construct of the knowledge map of TCM treatment of DPN, and to promote the explanation of the implicit knowledge in the literature on the treatment of DPN with TCM.

Methods: Taking the literature of China National Knowledge Infrastructure about TCM treatment of DPN as the main data source, TCM-related concepts and entities were constructed by manual citation, and the corresponding relationships between the entities were established. Structured data were formed by processing with Python 3.7, and the knowledge graph was constructed based on Neo4j 3.5.34 graph database

Results: The resulting knowledge graph with TCM diagnosis and treatment logic, defined 12 node labels such as prescriptions, Chinese medicines and syndrome types at the schema layer, as well as 4 types of relationships, such as inclusion, correspondence, selection and composition. It could support the query and discovery of nodes (syndrome elements, syndrome types and treatment methods), as well as the relationship between each node.

Conclusion: Based on the literature data, this study constructed a knowledge map for TCM treatment of DPN, which brought together various methods of TCM treatment of DPN, including internal and external treatment. The whole chain knowledge structure of syndrome differentiation and classification for DPN treatment is formed from syndrome element analysis, syndrome type composition to treatment method selection, which can provide new ideas and methods for literature data to serve clinical and scientific research work, as well as reference for visualization of TCM literature knowledge, intellectualization of TCM knowledge services and the standardization of TCM diagnosis and treatment

Abstract submission # 205**Continuous Peripheral Electrical Nerve Stimulation Improves Cardiac Functioning via Autonomic Nerve Regulation in Myocardial Infarction Rats**

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Objective: This study aimed to explore the correlations between autonomic nervous balancing and functional cardiac repair after myocardial infarction (MI), clarify the optimal acupoint selection, and time course for somatic interventions like peripheral electrical nerve stimulation (PENS).

Methods: Activities of the superior cervical cardiac sympathetic nerve (SN) and vagus nerve (VN) were exposed and recorded to reflect the autonomic tone directly, and the Millar pressure-volume loop system was used for the LV diastolic and systolic functioning. ECG and echocardiography recordings were performed to analyze HR, HRV, and LV contractility before and after modeling and at days 3, 7, 14, 21, and 28 post-MI. The effect of continuous PENS (cPENS) or instant PENS (iPENS) on autonomic and cardiac indications was tested.

Results: The activities of SN increased as compensatory self-regulation at 7 and 14 d post-MI but were followed by an imbalance of autonomic tone and cardiac dysfunction as heart failure (HF) at 28

d post-MI. cPENS-PC6 on forelimb, homo-segmental to the heart, could maintain SN hyperexcitability, improve myocardial systolic and diastolic abilities, reduce myocardial fibrosis at 28 d post-MI, whereas cPENS-ST36 on hindlimb with hetero-segmental innervations to the heart produced more limited effect. Interestingly, iPENS-PC6 increased SN and VN discharges, HR, LF/HF ratio of HRV, cardiac pumping, and iPENS-ST36 enhanced pumping of rats in the cPENS-PC6 group. Similarly, iPENS-PC6 was manifested as improved pumping, myocardial systole, and diastole function, and iPENS-ST36 promoted the discharge frequency of SN, systole, and diastole in rats accepting cPENS-ST36.

Conclusion: Rats showed autonomic fluctuations and cardiac dysfunctions 28 d post-MI. cPENS produced sympathomimetic action to sustain cardiac self-compensation but with acupoint differentiations, while based on cPENS, iPENS evoked autonomic regulations and cardiac benefits without acupoint differentiations.

Abstract submission # 195**Current Status of Acupuncture Application among Inpatients of Western Medicine Departments in General Hospitals—A Cross-sectional Survey**

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Objective: To understand the application status of acupuncture and moxibustion in the inpatients of various clinical departments of Western medicine in general hospitals, and to provide reference for the promotion and application of acupuncture and moxibustion in the Western medicine-based healthcare system.

Methods: Acupuncture consultation records and related hospitalization information of inpatients in three general hospitals in Guizhou Province from January 1, 2017 to December 31, 2021 were collected through the hospital information management system, and the general conditions, departments, consultation reasons, treatment means, primary diseases, and the systems of the consultation patients were statistically analyzed. The departments were classified according to the first and second level departments. The primary disease and its system were coded according to ICD-11, and the results are expressed as frequency.

Results: In the past 5 years, acupuncturists in the 3 hospitals received a total of 38,422 acupuncture consultation records of 28,254 patients, distributed in 19 first-level departments and 48 second-level departments. Neurology, neurosurgery, orthopedics, cardiovascular medicine, and emergency medicine were the top 5 second-level departments and accounted for 57.9% of the total number of consultations. There were 80 kinds of consultation reasons in 13 categories, mainly neurological and gastrointestinal symptoms, accounting for 82.6% of all consultation reasons. The primary disease involved a total of 617 diseases in 23 chapters, of which 55 were more than 1 case/month, accounting for 82.8%, and 17 were more than 1 case/week, accounting for 63.3%. There were 17 kinds of acupuncture therapy commonly used, mainly acupuncture therapy, scalp acupuncture, moxibustion, needle-embedding therapy and acupoint pressure.

Conclusion: Acupuncture therapy is underutilized in various clinical departments in general hospitals, and there are differences in the characteristics of acupuncture consultations in different hospitals, which need to be strengthened for the promotion of acupuncture and moxibustion therapies in general hospitals.

Abstract submission # 128**Development and Evaluation of an Evidence-based Chinese Food Therapy Intervention for Reducing Malnutrition in Elderly Gastrointestinal Cancer Patients: Protocol for a Multiple-methods Study**Ting Gan¹, Zhengang Bi², Zhendong Huang³, Hairong Ren⁴¹. Hubei University of Chinese Medicine, China². Department of Oncology, Hubei Hospital of Traditional Chinese Medicine, Hubei University of Chinese Medicine, China³. Department of Anesthesiology, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, China⁴. School of Nursing, Hubei University of Chinese Medicine, China

Background: Gastrointestinal cancers are recognized to be prevalent in the age group of 65 years and older. Over half of the elderly gastrointestinal cancer patients suffered from malnutrition. Numerous literatures have reported the positive effect of Chinese food therapy in nutritional management among diverse populations; however, evidence on Chinese food therapy intervention among elderly gastrointestinal cancer patients remains lacking.

Objective: This study aims to develop an evidence-based Chinese food therapy intervention for elderly gastrointestinal cancer patients, and evaluate its safety, feasibility and preliminary effectiveness in reducing malnutrition.

Methods: Under the guidance of the Medical Research Council (MRC) framework, this study consists of two phases. Phase 1 will be intervention development. Multiple evidence from a literature review, a cross-sectional study among the patients, and an expert consultation will be integrated for developing the intervention protocol. Phase 2 will be a pilot randomized controlled trial. Participants in intervention group are proposed to receive a 3-month Chinese food therapy intervention while the comparator will be a waitlist control. Primary outcomes will be safety (adverse events), feasibility (time to complete the recruitment, eligibility rate, recruitment rate, retention rate, attendance rate, participants' burden, participants' perceived effectiveness). Secondary outcomes will be weight, nutritional intake, nutritional status, gastrointestinal symptoms, and quality of life. Outcomes will be measured at pre- and post- intervention.

Discussion: An evidence-based Chinese food therapy intervention for reducing malnutrition in elderly gastrointestinal cancer patients will be developed and tested in this study. Results of safety, feasibility, and preliminary effectiveness from the pilot trial will inform the design of the future definitive trial. The findings will promote the dissemination of evidence-based Chinese food therapy.

Abstract submission # 213**Discussion on the Way of Popularizing Acupuncture-moxibustion Therapy in Community Medical Institutions**

Lina Ma, Kun Jiao, Chunmei Gao

The purpose of this paper is to analyze and discuss the promotion path of acupuncture therapy in community medical institutions from a professional point of view. Taking the current situation of community medical institutions in Langfang city as an example, analysis of the current national and local efforts to promote appropriate technology of Chinese medicine medical reform policy, clear acupuncture and moxibustion therapy in the community to promote the importance and value, and then analyze the current problems facing the promotion. In view of these problems, this paper puts forward countermeasures and suggestions for popularizing acupuncture and moxibustion therapy in various forms, at various levels and in all directions.

Abstract submission # 214**Distinct Intensity of Electroacupuncture Suppressed Mechanical Hypersensitivity and Attenuated Spinal Dorsal****Neuronal Responsiveness in Rats with Inflammatory Muscle Pain**

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Acupuncture has been extensively utilized for chronic pain management with remarkable effectiveness. However, the underlying neuronal mechanisms of acupuncture analgesia remains limited. Sensitization of spinal dorsal horn neurons significantly contributes to pain hypersensitivity. To reveal the potential spinal mechanisms of acupuncture in pain relief, this study examined the impact of electroacupuncture (EA) at varying intensities on spinal neuronal sensitization by measuring the excitabilities of spinal wide dynamic range (WDR) neurons and field potentials in rats with inflammatory muscle pain. Complete Freund's adjuvant (CFA) was injected into the left gastrocnemius muscle of rats to induce inflammatory muscle pain. EA at A β , A δ and C intensities (EAA β , EAA δ and EAC) were administered daily since the 3rd day post CFA injection. The weight-bearing, Randall-Selitto and von Frey test showed that EA at intensity of both A δ and C, but not A β significantly alleviated spontaneous and mechanical-evoked nociception in inflammatory muscular pain rats, while EAC exhibited a notably superior pain-relieving effect. Electrophysiological recordings revealed a significant increase in the responsiveness of spinal WDR neurons to mechanical and electrical stimuli in rats with inflammatory muscle pain. Meanwhile, CFA-treated rats exhibited obvious windup phenomenon in WDR neurons, as well as lowered threshold of C-fiber evoked field potential (CFEFP) and long-term potential (LTP) of synaptic transmission, suggesting the development of central sensitization. After EAA δ and EAC interventions, the mechanical and electrical responsiveness of WDR neurons markedly decreased, accompanied by immediate and sustained reductions in the windup response of WDR neurons. It is noteworthy that EAC exhibited a more pronounced suppressive effect. Additionally, EAA δ raised the threshold of spinal CFEFP, while EAC intervention also significantly alleviated the occurrence of LTP in rats with inflammatory muscle pain. Thus, EA intervention exerted analgesic effects through reducing the responsiveness and sensitization of spinal dorsal horn neurons, with EAC demonstrating superior efficacy.

Abstract submission # 67**Effect of Adjunctive Acupuncture on Pain Relief Among Emergency Department Patients with Acute Renal Colic Due to Urolithiasis: A Randomized Clinical Trial**Jianfeng Tu¹, Ying Cao², Liqiong Wang¹, Guangxia Shi¹, Liancheng Jia², Baoli Liu², Weihai Yao², Xiaolu Pei², Yan Cao¹, Hewen Li¹, Shiyan Yan¹, Jingwen Yang¹, Zhicheng Qu²¹. School of Acupuncture-Moxibustion and Tuina, Beijing University of Chinese Medicine, China². Beijing Hospital of Traditional Chinese Medicine, Capital Medical University, China

Objective: Renal colic is described as one of the worst types of pain, and effective analgesia in the shortest possible time is of paramount importance. This trial was aimed to examine whether acupuncture, as an adjunctive therapy to analgesics, could accelerate pain relief in patients with acute renal colic.

Methods: This single-center, sham-controlled, randomized clinical trial was conducted in an emergency department in China between March 2020 and September 2020. Participants with acute renal colic (visual analog scale [VAS] score ≥ 4) due to urolithiasis were recruited. Data were analyzed from October 2020 to January 2022. After diagnosis and randomization, all patients received 50 mg/2 mL of diclofenac sodium intramuscular injection immediately followed by 30-minute acupuncture or sham acupuncture. The primary

outcome was the response rate at 10 min after needle manipulation, which was defined as the proportion of participants whose VAS score decreased by at least 50% from baseline.

Results: A total of 115 participants were screened and 80 participants (66 men [82.5%]; mean [SD] age, 45.8 [13.8] years) were enrolled, consisting of 40 per group. The response rates at 10 min were 77.5% (31 of 40) and 10.0% (4 of 40) in the acupuncture and sham acupuncture groups, respectively. The between-group differences were 67.5% (95% CI, 51.5% to 83.4%; $P < 0.001$). The response rates of acupuncture were also significantly higher than sham acupuncture at 0, 5, 15, 20 and 30 min, whereas no significant difference was detected at 45 and 60 min. There was a significant reduction of VAS score in the acupuncture group compared with the sham acupuncture group at 0, 5, 15, 20, 30, 45, and 60 min. No adverse events occurred during the trial.

Conclusion: Acupuncture plus diclofenac is safe and provides fast and substantial pain relief for patients with renal colic compared with sham acupuncture in the emergency setting. Acupuncture can be considered an optional adjunctive therapy in relieving acute renal colic.

Abstract submission # 272

Effect of Electroacupuncture at Different Acupoint Combination on Intestinal Inflammatory Response and Intestinal Flora in Obese Rats

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Objective: To observe the effect of electroacupuncture (EA) at different acupoint combination on intestinal inflammatory response, intestinal flora structure and metabolic function in obese rats.

Methods: Ninety male Wistar rats aged 8 weeks were collected. Seventy-five rats were fed with high-fat diet to induce obesity models. Forty rats were modeled successfully and randomized into a model group, a lower-limb EA group, an abdomen EA group and a biaooben acupoints group. Zusanli (ST36) and Fenglong (ST40) were selected in the lower-limb EA group. Zhongwan (CV12), Tianshu (ST25) and Guanyuan (CV4) were selected in the abdomen EA group. The acupoint prescriptions in the above two groups were combined in the biaooben acupoints group. After intervention, using Western blot method, the proteins expressions of interleukin-6 (IL-6) and tumor necrosis factor- α (TNF- α) were detected in the tissue of the small intestine; 16S rRNA sequencing technology was adopted to detect the distribution structure and metabolic function of intestinal flora.

Results: Compared with the normal group, the body weight, the food intake, and the protein expressions of IL-6 and TNF- α in small intestine were all increased in the model group. The above indexes of each EA intervention group were all decreased when compared with the model group. Compared with the model group, the ratio of Firmicutes/Bacteroidetes in each EA intervention group was reduced and the abundance of *Lactobacillus*, *Bifidobacteria* and *Bacteroidetes* increased. Compared with the other two EA intervention groups, the abundance of *Lactobacillus* and *Muribaculaceae* was increased, while the abundance of *Collinsella* and *Ruminococcus gnavreaii* reduced in the biaooben acupoints group. In comparison with the model group, the abundance of the abundance of clusters of orthologous groups of proteins function of intestinal flora in the transportation and metabolism of carbohydrate, amino acid and lipid, as well as in the signal transduction mechanisms was increased in each EA intervention group.

Conclusion: Electroacupuncture at biaooben acupoint combination may attenuate intestinal inflammatory response and effectively improve the structure and function of intestinal flora. The effect is superior to the intervention at the acupoints on the lower limbs and those on the abdomen, better regulating the abundance of specific intestinal flora.

Abstract submission # 164

Effect of Electroacupuncture at Different Frequencies on Analgesia and Endogenous Opioid Peptide Mechanism in Rats with Brachial Plexus Injury

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Objective: To observe the effect of electroacupuncture (EA) on neuropathic pain in rats with brachial plexus injury (BPI) and explore its intracerebral mechanism.

Methods: Ninety Sprague-Dawley rats were randomly divided into a BPI model group, a 2 Hz EA group, a 100 Hz EA group, a sham-operated group, and a blank control group. Mechanical withdrawal threshold (MWT) was conducted after EA intervention. At different time points, six rats in each group were selected and sacrificed, whose brains were obtained by perfusion, embedded in paraffin, sectioned, and immunohistochemically stained for brain innervation. The positive expression of pro-opiomelanocortin (POMC), beta-endorphin, endomorphin-1, and mu-opioid receptor (MOR) in the nucleus was observed.

Results: When the EA intervention was performed for 21 d, the 2 Hz EA group had a statistical difference in MWT compared with the model group ($P < 0.05$). The 100 Hz EA group had a significant difference in MWT compared with the model group ($P < 0.01$). The IOD of POMC in the arcuate nucleus in the 2 Hz EA group was higher than that in the model group and the control group ($P < 0.01$). The IOD of MOR in the amygdala of the 2 Hz EA group was higher than that of other groups ($P < 0.01$). The IOD of MOR in the nucleus accumbens in the 2 Hz EA group was higher than that in the model group ($P < 0.01$).

Conclusion: EA may play an important role in attenuating pain and the reward circuit of the amygdala and nucleus accumbens. EA may be used as one of the alternative treatments for neuropathic pain after BPI.

Abstract submission # 13

Effect of Home-based Acupressure on Constipation among Community-dwelling People with Spinal Cord Injury: A Randomized Controlled Trial

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Background: Acupressure, known for its non-invasive nature and low cost, has shown effectiveness in alleviating constipation in patients with stroke or psychiatric disorders. However, no prior research has examined the efficacy of acupressure in treating constipation among community-dwelling individuals with spinal cord injury (SCI), although up to two-thirds of this population experience this condition.

Objective: This trial aimed to examine the effects of home-based acupressure on constipation and related health outcomes in community-dwelling individuals with SCI.

Methods: This was a single-blinded, parallel randomized controlled trial. Eighty eligible community-dwelling SCI adults were randomly assigned to either the home-based acupressure group (Hegu, Zusanli, Tianshu, and Zhongwan acupoints) or the sham group (abdomen touching) for a 10-day procedure. Both groups received nursing education. Primary outcome, i.e., constipation symptoms, was

measured by the Constipation Assessment Scale. Secondary outcomes, i.e., bowel habits, constipation related quality of life, and psychological well-being, were measured by single items (e.g., defecation duration and frequency), the Patient Assessment of Constipation Quality of Life Questionnaire, and the Depression Anxiety Stress Scales, respectively. Data were collected at pre-, post-intervention, and one-month follow-up. We used generalized estimating equation for efficacy estimation. The trial has obtained ethical approval (HSEARS20221031003) and was prospectively registered (NCT05558657).

Results: Compared to the control group, the intervention showed significant improvement in constipation at the one-month follow-up (Cohen's $d = -0.95$, $P < 0.001$), significant improvement in depression (Cohen's $d = -0.72$, $P = 0.022$) and anxiety (Cohen's $d = -0.69$, $P = 0.036$) at post-intervention; and significant improvements in constipation-related quality of life at both post-intervention (Cohen's $d = -0.81$, $P = 0.005$) and one-month follow-up (Cohen's $d = -1.07$, $P < 0.001$).

Conclusion: The study demonstrated the effectiveness of a home-based acupressure intervention for community-dwelling individuals with SCI, resulting in improved defecation and quality of life related to constipation. These findings could inform evidence-based practices for managing constipation in this population by community health professionals.

Abstract submission # 228

Effect of Xuebijing Injection on Inflammatory Response and Warburg Effect Mediated by PKM2 in Rats with Acute Lung Injury

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Objective: To observe the inhibitory effect of Xuebijing injection on inflammatory response in acute lung injury rats and its regulatory effect on the Warburg effect mediated by pyruvate kinase M2 (PKM2).

Methods: Thirty male Sprague-Dawley rats were randomly divided into a normal group, a model group (LPS-induced), and a Xuebijing injection group. The treatment group received intervention with Xuebijing injection for 3 consecutive days, while the model group and normal group did not receive any intervention. The wet/dry weight ratio (W/D) of lung tissue was measured to evaluate the degree of pulmonary edema; enzyme-linked immunosorbent assay was used to detect the levels of serum inflammatory factors interleukin-6 (IL-6) and interleukin-17 (IL-17); hematoxylin and eosin (HE) staining to observe lung tissue damage in rats, lactate assay to detect Warburg effect product lactate content in lung tissue, reverse transcription-polymerase chain reaction and Western blot to detect PKM2 mRNA content and protein level.

Results: Compared with the normal group, the lung tissue W/D was significantly increased ($P < 0.001$), and the inflammatory factors IL-6 and IL-17 were increased ($P < 0.001$). HE staining showed that the lung tissue structure of the model group rats was severely damaged, the alveolar wall thickened, accompanied by a large number of inflammatory cell infiltration, the lung tissue lactate content increased ($P < 0.001$), and the PKM2 mRNA and protein expression were significantly increased ($P < 0.01$ or $P < 0.001$). Compared with the model group, the Xuebijing injection group showed a decrease in lung tissue W/D ($P < 0.05$), decreased levels of inflammatory factors IL-6 and IL-17 ($P < 0.01$ or $P < 0.001$), improved lung tissue injury and inflammatory cell infiltration, decreased lactate content in lung tissue ($P < 0.001$), and decreased levels of PKM2 mRNA and protein ($P < 0.01$ or $P < 0.001$).

Conclusion: Xuebijing injection can improve lung injury and inflammatory response in rats with acute lung injury, and its

mechanism may be related to downregulating the Warburg effect mediated by PKM2.

Abstract submission # 119

Effectiveness and Safety of Thread Embedding Acupuncture in Postmenopausal Women with Overactive Bladder: A Prospective, Single-arm, Before-After Study

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Objective: This study aimed to assess the effect of thread embedding acupuncture treatment in postmenopausal women with overactive bladder (OAB).

Methods: This single-arm preliminary study enrolled twenty postmenopausal women with OAB. Participants underwent thread embedding acupuncture treatment once a week for eight weeks (a total of 8 sessions) and evaluated by 3-day bladder diary (micturition frequency, urgency and incontinence), Overactive Bladder Symptom Score (OABSS), and King's Health Questionnaire (KHQ) at three time points: baseline, end of treatment, and four weeks after treatment completion (follow up).

Results: Nineteen participants completed our study. The average daily micturition frequency decreased significantly from 10.71 ± 2.47 at pre-treatment (visit 1) to 8.16 ± 1.99 post-treatment (visit 8), and further to 8.02 ± 2.1 at one month after treatment completion (visit 9) ($P = 0.001$, $P = 0.001$). Daytime and nighttime micturition frequency, and OABSS also decreased statistically significantly at the end of the treatment and one month follow-up. However, no significant differences were observed in urgency, incontinence, and KHQ scores before and after treatment. No serious adverse events were reported, but one patient reported experiencing low back pain and knee pain.

Discussion: This trial found that thread embedding acupuncture treatment may improve mean daily micturition, daytime micturition, and nocturnal micturition, with sustained effects at the one-month follow-up. Additionally, the absence of significant side effects confirmed its potential as an alternative treatment. We are planning to conduct additional studies with control groups to corroborate the efficacy and safety of the treatment. Furthermore, we intend to perform supplementary analyses on the therapeutic mechanism and appropriate treatment duration, utilizing Heart Rate Variability (HRV) testing.

Abstract submission # 82

Effectiveness of Diabetes Management Programs and Perceptions of Participants: A Systematic Review of Mixed Method Studies

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Objective: Diabetes management programs (DMP) could help patients with diabetes fully understand the disease, maintain a healthy lifestyle, keep the illness under control, provide psychosocial support, thus making them manage diabetes better. We conducted a systematic review to evaluate the effectiveness of DMP on patients with diabetes and understand perceptions of participants.

Methods: Eligible articles were searched in three databases from their inception to November 2023. Only mixed method studies evaluating the effectiveness of DMP and integrating perceptions of participants were considered. The Joanna Briggs Institute critical appraisal tools were used for quality appraisal. The convergent segregated approach was used to synthesize and integrate quantitative and qualitative data.

Results: Twenty-nine mixed method studies were included. The

quantitative evidence showed that haemoglobin A 1c (HbA1c), blood pressure levels, triglyceride, and body mass index outcomes were lower in the intervention group than the control group ($P > 0.05$). The DMP had a significantly better effect on total cholesterol than the control group ($P < 0.05$). The decreasing trends of HbA1c in the DMP group were more evident with the extension of time (3 months: weighted mean difference [WMD] = -0.39 , 95% CI: -1.02 to 0.23 , $P = 0.22$; 6 months: WMD = -0.51 , 95% CI: -1.08 to 0.05 , $P = 0.08$; 12 months: WMD = -0.06 , 95% CI: -0.93 to 0.81 , $P = 0.002$). Qualitative data were synthesized to these categories: attitudes towards DMP, health literacy and understanding of diabetes, psychological outcomes, health behaviors, information sharing and interactive support, barriers, and areas to improve. Participants with DMP could have better understanding of diabetes, improve psychological outcomes, maintain healthy lifestyle, and summarize barriers and improvements, which complemented the qualitative results.

Conclusion: The DMP intervention is effective for patients with diabetes, and contributes to the understanding, perceptions of barriers and improvement, providing evidence for decision-making in diabetes management.

Abstract submission # 194

Effectiveness of Self-acupressure to Reduce Insomnia, Depression, and Anxiety among Cancer Patients: A Pilot Study

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Objective: Current evidence for using self-acupressure to manage the cancer-related symptom cluster of insomnia, depression, and anxiety, while promising, is unknown. This study evaluated the preliminary effect of self-acupressure on managing this symptom cluster.

Methods: A pilot randomized control trial was implemented. Participants were assigned randomly to three study groups, namely the true acupressure (TAP), the sham acupressure (SAP), and the enhanced standard care group (ESC). Participants in the TAP and SAP groups received a training session on acupressure and were required to practice self-acupressure at home once daily for 28 d. The duration of participant involvement was 8 weeks. Outcomes were measured using Numerical Rating Scale (NRS), the Insomnia Severity Index, the Hospital Anxiety and Depression Scale, and the Functional Assessment of Cancer Therapy—General at baseline (T1), post-intervention (T2, week 4), and post follow-up (T3, week 8).

Results: The results indicated that the intervention had clinical significance in improving the targeted symptoms. In the TAP group, the symptom cluster severity was significantly lower than in the other groups at T2 ($P < 0.05$). The insomnia severity and anxiety scores in the TAP and SAP groups were significantly lower than those in the ESC group at T2 and T3 ($P < 0.05$).

Conclusion: The results suggested that further testing of self-acupressure is warranted to inform its effectiveness on the targeted symptom cluster in patients with cancer. A placebo effect was evident alongside therapeutic effects.

Abstract submission # 106

Effects of Acupuncture on SATB1/p21 Signaling Pathway and Aging-related Markers in MPTP-induced Parkinson's Disease Mice

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Objective: To observe the neuroprotective effects of acupuncture in Parkinson's disease (PD) model mice.

Methods: C57BL/6J mice were randomly divided into the normal control (NC) group, 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) group, acupuncture group (ACU), and rasagiline group (RAS). PD mouse model was established by injected intraperitoneally with MPTP (30 mg/kg). Subsequently, mice in the ACU group were given acupuncture at Baihui (GV20) and bilateral Yanglingquan (GB34) for 15 min, once daily for 14 d. Mice in the RAS group were treated with gavage of rasagiline mesylate (0.5 mg/kg) once daily for 14 d.

Results: Compared with the NC group, the overall rod performance (ORP) score and the number of tyrosine hydroxylase (TH)-positive neurons in the midbrain substantia nigra (SN) were significantly lower in mice of the MPTP group ($P < 0.05$); compared with the MPTP group, the ORP score and the number of TH-positive neurons were significantly increased in the ACU and RAS groups ($P < 0.05$). Compared with the NC group, the protein levels of nigral interleukin-6 (IL-6), senescence-associated β -galactosidase (SA- β -gal), p53 and p21 were significantly increased in the mice of MPTP group ($P < 0.05$); compared with the MPTP group, the protein levels of IL-6, SA- β -gal, p53 and p21 were significantly decreased in the mice of the ACU group and the RAS group ($P < 0.05$). Compared with the NC group, the relative expression of nigral special AT-rich sequence-binding protein 1 (SATB1) protein and mRNA in the mice of the MPTP group was significantly decreased ($P < 0.05$); compared with the MPTP group, mice in the ACU and RAS groups showed significant increases in the relative expression of SATB1 protein and mRNA ($P < 0.05$).

Conclusion: Acupuncture could improve motor function and increase the number of TH-positive neurons in the SN of PD model mice, which may relate to the regulation of the SATB1/p21 signaling pathway and the inhibition of cellular senescence-related biomarker expression in the SN.

Abstract submission # 120

Effects of Acupuncture on the Modulation of Function and Structure of Anterior Cingulate Cortex-related Brain System in Patients with Knee Osteoarthritis: A Randomized Multimodal Neuroimaging Trial

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Objective: Acupuncture benefits from multicomponents that have shown treatment efficacy on knee osteoarthritis (KOA). However, the placebo effect of acupuncture is debated possibly due to lack of understanding of the underlying mechanisms. This study was undertaken to distinguish the neural mechanisms of the placebo effect of acupuncture from another effect.

Methods: Ninety patients with KOA were divided into acupuncture group (AG), sham acupuncture group (SG), or waiting list group (WG), three times a week over 12 treatments. NRS, WOMAC score, functional and structural magnetic resonance imaging were collected before and after treatment. We assessed the degree centrality (DC), functional connectivity (FC), and cortical indexes to investigate the cerebral mechanism of the placebo (SG vs WG) and specific (AG vs SG) effects of acupuncture.

Results: KOA patients in AG experienced a greater reduction in NRS, compared to SG and WG (overall $P < 0.001$). In AG, decreased DC in superior frontal gyrus (SFG)/anterior cingulate gyrus (ACC),

increased DC in Pons/Midbrain, and increased thickness in the left caudal ACC (cACC) were observed compared to SG. Moreover, compared to WG, increased DC in SFG/ACC, the surface area of left rostral ACC (rACC) (ES = 0.618, $P = 0.043$) and superior frontal (ES = 0.743, $P = 0.017$) were also observed in the SG.

Conclusion: The placebo analgesic effect of acupuncture may be achieved by increasing cortical surface area of rACC/SFG and the decreasing activity of primary somatosensory cortex. The specific effect of acupuncture affected cACC thickness and increased the functional activity of the limbic system.

Abstract submission # 232

Effects of Auricular Acupuncture Therapy on Analgesia and Expression of Inflammatory Factor in the Rat of Sciatica Secondary to Lumbar Disc Herniation

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Background: Sciatica secondary to lumbar intervertebral disc herniation is a common disease, which seriously affects the quality of life of patients and causes a huge economic burden to the society. Auricular acupuncture, as an adjuvant alternative therapy, many studies have demonstrated its positive effect in relieving sciatica pain secondary to lumbar disc herniation, but the mechanism is still unclear. Reports confirm that inflammatory factors are the key factors in sciatica, but it is uncertain whether auricular therapy can improve analgesia effect by reducing the level of inflammatory factor.

Objective: To study the analgesia effect of auricular acupuncture and the level of inflammatory factor, and to provide experimental research evidence for acupuncture therapy on analgesic.

Methods: A rat model of sciatica secondary to lumbar disc herniation was prepared by autologous transplantation (nucleus pulposus transplantation, NP). Rats were randomly divided into normal group, model group, sham surgery group, auricular acupoint acupuncture group and parecoxib analgesic group. The changes of thresholds of PWT and PWL were observed at 1, 3, 5, 7, 10, and 14 d. Serum levels of inflammatory factors such as interleukin (IL)-1 β , IL-6 and tumor necrosis factor- α (TNF- α) were detected by enzyme-linked immunosorbent assay.

Results: Compared with the NP model group, the sham group and normal group, the thresholds of PWT and PWL in rats after auricular acupuncture intervention increased significantly ($P < 0.05$), and the levels of IL-1 β , IL-6, and TNF- α in the rat of auricular acupuncture group decreased compared with the model group and sham group ($P < 0.05$), but the difference with the drug group was not obvious ($P > 0.05$).

Conclusion: The auricular acupuncture can effectively relieve pain and reduce the levels of inflammatory factors IL-1 β , IL-6 and TNF- α in NP-model rats. It will be beneficial to further study of anti-inflammatory analgesic mechanism of auricular acupuncture.

Abstract submission # 238

Effects of Fu's Subcutaneous Needling on Mitochondrial Structure and Function in Rats with Sciatica

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To observe the effects of Fu's subcutaneous needling (FSN) and acupuncture treatment on the mitochondrial structure and function of the skeletal muscle tissue of rats with sciatica. Forty Sprague-Dawley rats were divided into control, model, acupuncture, and FSN groups (10 each) according to a random number table. The control group was left untreated. Rats in the FSN group were treated with FSN once every 2 d for three times, respectively (days 1, 3, 5, and 7), to cooperate with reperfusion approach. The acupuncture group was

treated at the same timeline as that of the FSN group. Changes in the mechanical pain threshold, mitochondrial ultrastructure, mitochondrial citrate synthase (CS) activities, mitochondrial respiratory chain complex II, and mitochondrial COX-I protein expression in the skeletal muscle of rats treated with different treatments were compared with those of the model group. The pain thresholds of the rats were remarkably higher after FSN treatment and acupuncture, and the pain threshold of the FSN group was higher than that of the acupuncture group. Compared with the control group, the mitochondria of the model group had a damaged ultrastructure, were arranged in a disorganized manner, accumulated under the basement membrane, and appeared vacuolated with autophagosomes. The state of mitochondria in the FSN group was close to that in the control group and was remarkably better than that in the acupuncture group. The activities of mitochondrial CS and respiratory chain complex II in the skeletal muscle of the treated rats decreased compared with the control group ($P < 0.05$), and their levels were better in the FSN group than in the acupuncture group ($P < 0.05$). FSN treatment for 1 week considerably improved the pain thresholds and improved the skeletal muscle mitochondrial ultrastructure and mitochondrial function in rats with sciatica.

Abstract submission # 61

Effects of Qihuang Needle Therapy on Patients with Hypokinetic Dysarthria in Parkinson's Disease: A Case Report

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Background: Hypokinetic dysarthria is the collective term for speech disorders seen in Parkinson's disease (PD) patients. Among these, repetitive speech disorders, involving frequent repetitions of syllables, words, or phrases, are common. As for now, there is no definitive cure for this condition, only medications are available to slow down the progression of the disease and alleviate symptoms, albeit with potential side effects. Qihuang needle therapy utilizes the Qihuang needle as a tool, incorporating the five needling techniques outlined in the *Guanzhen* chapter of *Lingshu*. Compared to regular needle acupuncture, it offers the advantages of a reduced number of acupoint selections, enhanced therapeutic efficacy, and increased safety.

Case description: We present a case involving a 62-year-old Chinese woman who developed early-onset PD at the age of 56. Upon arrival at the hospital, the patient was utilizing a wheelchair, indicative of impaired motor function, and was classified as stage 5 on the Hoehn-Yahr scale. The symptoms included delayed reaction, coughing while drinking water, dizziness, severe episodes of vertigo, spontaneous repetitive speech and disrupted sleep. The current treatment regimen involved taking half a tablet of Madopar (125 mg), one Xining capsule (0.25 mg), one Kedan tablet (0.2 g), three times a day, among other medicines. Additionally, the patient was undergoing concurrent adhesive patch therapy, providing an estimated 3-hour duration of medication effectiveness. Following three sessions of Qihuang needle therapy, there has been a significant improvement, with a reduction in the duration of heightened spontaneous repetitive speech.

Conclusion: Managing hypokinetic dysarthria in PD can pose difficulties, especially in the absence of a cure. In this case, the patient underwent three sessions of Qihuang needle therapy, resulting in significant improvement in symptoms, especially a decrease in the duration of repetitive speech.

Abstract submission # 55**Effects of Self-administered Acupressure on Depression among Adolescents: A Randomized Controlled Pilot Study**

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Objective: The effectiveness of self-administered acupressure mild/moderate depression among undergraduate students was assessed by a double-blinded RCT.

Methods: Undergraduate students who were 18–25 years old with mild/moderate depression were recruited. Twenty-five eligible participants were randomly assigned into the acupressure group or sham control group in a 1:1 ratio. Massage procedure involved a 3-minute self-acupressure on upper limb for relaxation, followed by 3-minute massage on each of the acupoints, GV20 and EX-HN3 respectively. The participants then performed the acupressure 5 d per week for 8 consecutive weeks. Outcome measures including Hamilton Depression Scale-17 (HAMD-17), Pittsburgh Sleep Quality Index (PSQI), Sheehan Disability Scale (SDS) were collected at baseline, week 4- and week 8-post-intervention. A mixed-effects model for repeated measures was used for analysis of the primary end point.

Results: Both acupressure and sham control groups resulted in reduced HAMD-17 scores at week 4 and week 8. The HAMD-17 score was reduced from 14.5 ± 1.28 to 8.50 ± 1.64 in the acupressure group. While in the sham control group, the HAMD-17 score decreased from 13.8 ± 1.60 to 11.1 ± 1.01 . There was a trend showing a greater reduction in HAMD-17 score at week 4 in the acupressure group than in the sham control group, but the difference was not statistically significant ($P = 0.09$). The acupressure group reported a statistically significantly smaller score on SDS-social life than the sham control group at week 2. However, the acupressure group showed a larger PSQI than the sham acupressure group at week 4 ($P = 0.04$). For PSQI and SDS-family life/social life/school or work at other time points, no statistically significant difference was found.

Conclusion: The findings of the study suggest that self-administered acupressure has short-term effect on improving depressive symptoms. Further research is warranted to investigate the long-term effects of self-administered acupressure in a larger population size.

Abstract submission # 244**Efficacy and Analgesic Mechanism of Smokeless-moxibustion on Inflammatory Pain in Rats with Adjuvant-Induced Arthritis**

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Objective: To investigate the similarities and differences in the efficacy of smokeless-moxibustion and traditional-moxibustion in inflammatory pain.

Methods: The 48 male Sprague-Dawley rats were randomly divided into four groups: blank, model, smokeless-moxibustion, and traditional-moxibustion groups. Modeling was induced by injecting 0.1 mL complete Freund's adjuvant into the left ankle joint of the rats. Smokeless moxibustion or traditional moxibustion were performed at the left ST36 of the rats 72 h after modeling. The intervention was conducted once a day for 10 min over a period of 7 d. Pain level and joint swelling were evaluated, while inflammatory factors tumor necrosis factor- α (TNF- α), interleukin (IL)-1 β , IL-6, IL-10, and 5-hydroxytryptamine (5-HT) in serum and spinal dorsal horn were measured using enzyme-linked immunosorbent assay. TRPV1 mRNA expression in synovial membrane and spinal dorsal horn was quantified using PCR; The pathological morphology of ankle synovial membrane was detected by hematoxylin and eosin (HE) staining.

Results: Compared to the model group, both smokeless-moxibustion and traditional-moxibustion groups showed reduced joint swelling ($P < 0.05$), and increased TWL and PWMT ($P < 0.01$). After 7 d of treatment, compared to the model group, the expression of TNF- α , IL-1 β , IL-6, and 5-HT in the serum and dorsal horn of spinal cord significantly decreased in both smokeless-moxibustion and traditional-moxibustion groups ($P < 0.05$), while the expression of IL-10 increased ($P < 0.05$). Additionally, TRPV1 mRNA expression in the synovial membrane of ankle joints and dorsal horn of spinal cord was significantly reduced in rats from both moxibustion groups ($P < 0.01$). There was no significant difference between the smokeless-moxibustion group and traditional-moxibustion group statistically ($P > 0.05$). HE staining revealed that both smokeless moxibustion and traditional moxibustion improved synovium tissue morphology and reduced inflammation in rats compared to the model group.

Conclusion: Smokeless moxibustion reduces inflammation and pain in CFA-induced arthritic rats by suppressing serum and spinal inflammatory markers and regulating TRPV1 mRNA in the synovium and spine, thus improving arthritis symptoms.

Abstract submission # 158**Efficacy Evaluation of Electroacupuncture Intervention in Acute Phase of Idiopathic Facial Palsy: A Randomized Controlled Trial**

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Objective: To explore the efficacy evaluation of electroacupuncture on facial nerve function recovery in acute stage of idiopathic facial palsy.

Methods: The study was carried out in two phases, including acute and recovery phase. Subjects in the acute phases of the control group were given oral prednisone tablets and experimental group were given electroacupuncture therapy simultaneously in the acute phase. Both groups stopped taking prednisone tablets and turn to electroacupuncture therapy in recovery phase, so as to observe the therapeutic advantage, prognosis and safety of electroacupuncture therapy combined with point bloodletting in the acute phase of idiopathic facial palsy (IFP). The primary outcome indicators included Sunnybrook facial grading system (SFGS), House-Brackmann (H-B) system, and the secondary outcome indicators included facial disability index (FDI), the number and the used time of Grade I cases, and patient satisfaction evaluation.

Results: It showed that the two groups had different trends of SFGS and H-B score at different time. Intergroup comparison showed that the improvement of the experimental group was better than that of the control group at 30 d and 45 d after onset ($P < 0.05$). And the scores of FDI in two groups had different trends at different time points. Intergroup comparison showed that the FDIP scores of the experimental group were better than that of the control group 45 d after onset ($P < 0.05$). The scores of FDIS in the experimental group were better than those in the control group at 30 d and 45 d after onset ($P < 0.05$). In the end, the number of patients with H-B grade I was higher in the experimental group than that of the control group ($P < 0.05$). The treatment time was shorter in the experimental group ($P < 0.05$).

Conclusion: Electroacupuncture therapy in the acute stage of IFP can improve the recovery degree of facial nerve function, improve the curative effect, shorten the course of the disease, and safety of treatment.

Abstract submission # 199**Efficacy of Acupuncture Treatment for Breast Cancer-associated Insomnia: Study Protocol for a Multicenter Randomized Controlled Trial**

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Objective: Insomnia is one of the most common symptoms among breast cancer patients, which can be present throughout all stages of breast cancer. As a nonpharmacological alternative treatment, acupuncture has been suggested to improve sleep situations in patients with cancer suffering from insomnia. However, there is a lack of well-designed, high-quality clinical evidence regarding the efficacy of acupuncture in the treatment of breast cancer-associated insomnia. This study is conducted to evaluate the efficacy and safety of acupuncture treatment for breast cancer-associated insomnia.

Methods: This study was designed as a multicenter, randomized, sham-controlled clinical trial. A total of 264 eligible patients with breast cancer-associated insomnia will be randomized in a 1:1 ratio into an acupuncture group and a sham acupuncture group. In the trial, patients in the acupuncture and sham acupuncture groups will receive 12 sessions of treatment over a 4-week period. The primary outcome will be the treatment response rate of Insomnia Severity Index (ISI) at week 4; secondary outcomes include treatment remission rate of ISI, Sleep Efficiency (SE) obtained by the use of Sleep diary, treatment response rate of ISI at the 8th and 16th weeks of follow-up, the mean changes of ISI, Generalized Anxiety Disorder Scale (GAD-7), Patient Health Questionnaire-9 (PHQ-9), Core Quality of Life Questionnaire (QLQ-C30), sleep parameters recorded in actigraphy and weekly usage of remedial drugs. Adverse events will be recorded throughout the study. All analyses will be based on the ITT principle and performed with SAS 9.4 statistical software.

Discussion: This trial will evaluate the clinical efficacy and safety of acupuncture for breast cancer-associated insomnia. If effective, acupuncture will provide an effective option for patients with breast cancer-associated insomnia, playing a positive role in helping patients reduce their use of sleeping medications.

Abstract submission # 75**Efficacy of Electroacupuncture at Zusanli (ST36) and Xuanzhong (GB39) Acupoints on Synovial Tissue Inflammation and Beclin-1, Caspase 9 in Rats with Adjuvant Arthritis**

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Objective: Acupuncture can inhibit the inflammatory response of the synovium. We investigated the potential anti-inflammatory effects of electroacupuncture (EA) in the treatment of rheumatoid arthritis (RA) by observing the effects of EA on synovial tissue inflammation and the expression of Beclin-1 and caspase 9 in rats with adjuvant arthritis (AA).

Methods: In this study, we randomly divided 40 AA rats into blank control, model, EA and sham EA groups. AA rats in the EA group underwent electroacupuncture interventions at the Zusanli (ST36) and

the Xuanzhong (GB39) every 2 d for a total of eight times. The arthritis index score was recorded in AA rats. Inflammation of synovial tissue, osteoclast differentiation and cartilage damage were observed by hematoxylin-eosin staining, tartrate-resistant acid phosphatase (TRAP) staining, safranin O-fast green staining and toluidine blue staining, and TUNEL staining to observe synovial cell apoptosis. Flow cytometry was used to detect the percentage of T helper 17 (Th17) cells, regulatory T cells (Treg) in the peripheral blood of rats. The immunofluorescence triple-labeling technique was used to detect Beclin-1, caspase 9 and CD90 expression. Real-time quantitative polymerase chain reaction and Western blot were used to detect the mRNA and protein expression of Beclin-1 and caspase 9 in synovial tissues of rats in each group, respectively.

Results: Compared with the control group, arthritis scores were significantly reduced in the EA group, with less bone and cartilage damage, and increased synovial cell apoptosis. The percentage of Treg in the peripheral blood of EA group was increased, and the percentage of Th17 was significantly decreased. EA significantly decreased Beclin-1 and CD90 levels and increased protein and mRNA expression of caspase 9.

Conclusion: EA intervention significantly improved synovial tissue inflammation in AA rats, and its mechanism of action may be related to the inhibition of Beclin-1 and increase of caspase 9 expression by EA.

Abstract submission # 91**Efficacy of Modified Banxia Xiexin Decoction in the Management of “Wei-Pi” Syndrome (Postprandial Distress Syndrome): A Randomized, Waitlist-controlled Trial**

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Postprandial distress syndrome is a common disease nowadays, and is regarded like “Wei-Pi” in Chinese medicine. This current study aimed to evaluate the efficacy of modified Banxia Xiexin Decoction (BXD) in the management of “Wei-Pi” syndrome. A total of 88 patients with “Wei-Pi” syndrome were randomized into the BXD or waitlist control groups in a ratio of 1:1. The patients in the BXD group received the semi-individualized BXD based on the syndrome differentiation in CM for a duration of 3 weeks. Conversely, the patients in the waitlist control group were undergo the same BXD intervention and follow-up after a three-week waiting period. The primary outcome was the variation in the scores pertaining to the global scale of the Quality of Life Questionnaire for Functional Digestive Disorders (FDDQL) after 3 weeks. The secondary outcomes included the variations in the scores pertaining to the Hospital Anxiety and Depression Scale (HADS) and the EuroQoL 5-dimension 5-level questionnaire (EQ-5D-5L), and the results of the liver and kidney function tests. The total score of FDDQL at 3 weeks was significantly improved in the BXD group in comparison to the waitlist group. BXD significantly improved activity score, diet score, discomfort score, and coping with disease score in the FDDQL at 3 weeks compared to the waitlist. The depression score in HADS was significantly improved in the BXD group in comparison to the waitlist, but not in the anxiety score. BXD significantly improved the visual analogue scale of EQ-5D-5L at 1, 2 and 3 weeks respectively. The waitlist received 3 weeks of BXD and 3-week follow-up. Both BXD and delayed BXD had significant improvement of total score of FDDQL at week 3 and 6 compared to it at week 0. In our conclusion, BXD significantly improves the quality of life of the patients suffering from “Wei-Pi” syndrome

Abstract submission # 95**Efficacy of Xiao-yao San in Treating Hashimoto's Thyroiditis: A Meta-analysis and Systematic Review**

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Objective: To evaluate effectiveness of Xiao-yao San (XYS) preparations in the treatment of Hashimoto's thyroiditis (HT).

Methods: Eight databases were searched for randomized controlled trials (RCTs) of the YYS preparations in combination with a low-iodine diet, selenium yeast tablets, or levothyroxine for the treatment of HT. The timeframe for the search was from database construction to September 2023. After 2 evaluators independently screened the literature, extracted information, and evaluated the risk of bias of included studies, meta-analysis was performed using RevMan 5.4 software. The GRADE system was used to assess the correctness of the evidence.

Results: Five RCTs, including 340 patients with HT, were ultimately included. Meta-analysis showed that YYS preparations were effective in lowering thyroid peroxidase antibody (TPOAb) levels (standardized mean difference [SMD], -0.74 ; 95% CI: -1.02 , -0.46 ; $P < 0.00001$), and that the combination of levothyroxine or selenium-yeast tablets was more efficacious in reducing TPOAb; the YYS preparations were equally advantageous (SMD, -0.66 ; 95% CI: -1.05 , -0.26 ; $P = 0.001$) in reducing YYS preparations were also superior in lowering thyroglobulin antibodies (TgAb) (SMD, -0.66 ; 95% CI: -1.05 , -0.26 ; $P = 0.001$), and were more effective in combination with levothyroxine or selenium yeast tablets than with a low-iodine diet. The YYS preparations showed significant efficacy in increasing FT3 (SMD, 0.31 ; 95% CI: 0.01 , 0.61 ; $P = 0.04$), increasing FT4 (SMD, 0.58 ; 95% CI: 0.12 , 1.04 ; $P = 0.01$), and decreasing TSH (SMD, -0.76 ; 95% CI: -0.98 , -0.54 ; $P < 0.00001$), and the YYS preparations were more effective in restoring the serum levels of FT3 and FT4 in conjunction with a low iodine diet or in conjunction with selenium yeast tablets.

Conclusion: YYS preparations in combination with other therapeutic options may reduce thyroid autoantibodies and restore thyroid function in patients with HT. However, the quality of included studies was low. In addition, we reviewed that YYS preparations may have the potential to modulate cytokines by modulating immune factors and improving inflammation levels through certain pathways.

Abstract submission # 274**Efficacy Prediction of Acupuncture for Diabetic Patients with Cognitive Impairment Based on Multimodal Brain Imaging Analysis by Machine Learning: A Study Protocol**

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Background: Diabetes cognitive impairment (DCI) is a chronic complication of diabetes characterized by cognitive impairment. Patients with hyperglycemia were 1.5 times more likely to suffer from cognitive impairment (CI) than those without hyperglycemia. Acupuncture can effectively improve CI, but the efficiency of acupuncture in treating DCI is still inconclusive. Screening acupuncture treatment of DCI patients can provide an objective basis for clinical guidance. The aim of this study was to determine whether

the structural and functional activity of certain brain regions could predict CI improvement in DCI patients receiving acupuncture therapy.

Methods: A total of 50 DCI patients and 50 healthy controls (HCs) will be included in this study. Resting state structure and functional magnetic resonance imaging (MRI) data will be collected from each participant at baseline. DCI patients will receive 36 acupuncture treatments for 24 weeks, twice a week for the first 12 weeks and once a week for the next 12 weeks. Follow-up was 12 weeks. At weeks 0, 4, 8, 12, 16, 20, and 24, and at the end of follow-up (week 36), Systematic Cognitive Function Assessment Scale scores were recorded in detail. The positive response rate will be calculated as the proportion of patients whose systemic assessment of cognitive function is reduced by $\geq 50\%$ from baseline during follow-up. Machine learning methods will be used to classify DCI and HCs patients and predict whether patients will respond to acupuncture therapy based on multimodal MRI parameters such as gray matter volume, regional homogeneity, amplitude of low-frequency fluctuation, fractional anisotropy, and mean diffusivity.

Discussion: This study aimed to establish brain structural and functional characteristics to predict and identify patients with DCI who would benefit from CI improvement from acupuncture therapy.

Abstract submission # 168**Electroacupuncture Ameliorates Neuronal Injury by NLRP3/ASC/Caspase 1 Mediated Pyroptosis in Cerebral Ischemia-reperfusion**

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NLRP3/ASC/Caspase 1 mediated pyroptosis is one of the important causes of cerebral ischemia-reperfusion (I/R) injury. Electroacupuncture (EA) is widely used in clinical treatment of ischemic stroke. However, mechanism of EA on ischemic stroke remains unclear. Therefore, on basis of previous work, this study used middle cerebral artery occlusion (MCAO) 2 h and then reperfusion 7 d in rats to simulate brain I/R process. EA with Bahui (GV20) and Zusanli (ST36) and VX-765 (a specific inhibitor of caspase 1) were performed. In this study, we found that EA improved cerebral infarct size and neuronal damage, including ultrastructural injury, and ameliorated nitro/oxidative stress in cerebral I/R. Additionally, EA treatment significantly decreased ASC, caspase 1, GSDMD and IL-1 β expression and VX-765 treatment significantly decreased NLRP3, caspase 1 and IL-1 β expression. This proved that EA can regulate NLRP3/ASC/caspase 1-mediated pyroptosis, improve neuronal injury during cerebral I/R and provide basic experimental data for clinical treatment.

Abstract submission # 139**Electroacupuncture as a Potential Treatment for Cognitive Impairment in a Rat Model of Major Depressive Disorder**

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Objective: Cognitive impairment is a prevalent symptom in patients with major depressive disorder (MDD) at various stages of the disease. Electroacupuncture (EA) has shown promise in alleviating depressive symptoms in MDD as well as cognitive impairment in other neurodegenerative conditions. However, the effects of EA on cognitive symptoms in MDD have not been extensively studied. This

study aimed to assess the feasibility of using EA to alleviate cognitive symptoms in a rat model of MDD.

Methods: Male Sprague-Dawley rats were divided into three groups: sham (sesame oil only), corticosterone injection only (CORT only), and corticosterone injection with EA (CORT + EA). In the MDD model, CORT (40 mg/kg) was subcutaneously injected into the rats daily for 6 weeks to induce depressive-like behavior and cognitive symptoms. EA treatment was initiated 2 weeks after CORT administration, targeting the acupoints Baihui (DU20), Zusanli (ST36), and Yintang (EX-HN3). The burrowing test and novel object recognition (NOR) test were conducted in the final week of treatment.

Results: EA treatment did not restore the adrenal gland shrinkage induced by corticosterone administration. It showed improvements in the CORT + EA group compared to the CORT group in both the burrowing test and NOR test. EA treatment restored daily living activities in the burrowing test and exhibited potential to improve cognitive function, as demonstrated in the NOR test.

Conclusion: This study demonstrates that EA is compatible with the long-term corticosterone model of MDD. EA treatment shows significant potential as a complementary intervention to alleviate cognitive dysfunction in MDD patients in the future.

Abstract submission # 50

Electroacupuncture Attenuates Myocardial Ischemia-reperfusion Injury via LncRNA *TUG1*/miR-186-5p/ClpX Axis

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Objective: Caseinolytic protease X (ClpX), as a molecular chaperone of caseinolytic protease proteolytic subunit (ClpP), is involved in maintaining mitochondrial homeostasis. Myocardial ischemia-reperfusion injury (MIRI) often leads to oxidative stress and mitochondrial dysfunction, but the role of ClpX in maintaining mitochondrial homeostasis in MIRI has not been well studied. Acupuncture has been shown to regulate homeostasis, and this study aimed to investigate the potential mechanism if electroacupuncture could regulate ClpX to protect mitochondria in MIRI.

Methods: The MIRI model was replicated using ligation of the anterior descending branch of the left coronary artery. H9C2 cells were treated with H₂O₂ in vitro as well as different concentrations of ClpX overexpression and knockdown plasmids. The presence of binding between ClpX, miR-186-5p and taurine upregulated gene 1 (*TUG1*) was detected by dual luciferase.

Results: Electroacupuncture effectively prevented myocardial apoptosis, reduced oxidative stress, preserved mitochondrial function, and downregulated the overexpression of ClpX in rats with MIRI. In vitro, the expression levels of ClpX and ClpP were found to increase with the duration of H₂O₂ treatment in H9C2 cells. Additionally, the death of H9C2 was found to be dose-dependently associated with the overexpression of ClpX. Interestingly, the 0.5 µg ClpX plasmid (6-well plate) was virtually non-toxic to H9C2 and conferred resistance to H9C2 against some damage caused by H₂O₂. Besides, knockdown ClpX before H₂O₂ treatment revealed significantly less apoptosis. Single-cell dataset showed that the transcript levels of *TUG1* and ClpX were similarly distributed in myocardial tissue. The dual luciferase assay showed that *TUG1* could positively regulate ClpX expression by sponging miR-186-5p. In MIRI, *TUG1* expression was found to be elevated, and electroacupuncture was able to inhibit the stress-induced elevation of ClpX by downregulating *TUG1*.

Conclusion: Our results suggested that ClpX overexpression leads to cardiomyocyte death, and electroacupuncture can inhibit ClpX stress elevation, alleviate oxidative stress, maintain mitochondrial function, and protect the myocardium through *TUG1*/miR-186-5p in MIRI rats.

Abstract submission # 26

Electroacupuncture Enhances Omeprazole's Effectiveness in Treating Indomethacin-induced Gastrointestinal Injury in Mice through Nrf2-Keap1 Pathway Based on Vagus Nerve

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Objective: To determine whether electroacupuncture (EA) in combination with omeprazole could give better results in the treatment of Indomethacin-induced gastric ulcer and intestinal injury as compared to omeprazole alone, and to reveal the underlying mechanism of it.

Methods: Indomethacin induction was utilized to establish a mouse gastric ulcer model. After the mice were sacrificed, ulcer index was used to evaluate gastric injury severity. The level of serum diamine oxidase (DAO), intestinal and gastric superoxide dismutase (SOD), catalase (CAT), heme oxygenase-1 (HO-1), nuclear factor-erythroid 2-related factor 2 (Nrf2) and Kelch-like ECH-associated protein-1 (Keap-1) were detected. Vagotomy was applied to investigate the role of vagus nerve in this process.

Results: After modeling, ulcer index and the level of tumor necrosis factor-α and serum DAO increased significantly and levels of intestinal and gastric SOD, CAT, HO-1, Nrf2 and Keap-1 were significantly lower, indicating that indomethacin caused gastrointestinal injury. After EA in combination with omeprazole treatment, these indexes exhibited significant opposite trends and were more pronounced than those of omeprazole treatment group and sham acupuncture group. The therapeutic effect of EA was blocked by Nrf2 inhibitor ML385 and vagotomy.

Conclusion: Electroacupuncture combination with omeprazole could better repair indomethacin-induced gastrointestinal injury via Nrf2-Keap1 antioxidant pathway, this effect was primarily mediated via vagus nerve.

Abstract submission # 134

Electroacupuncture Improved Cognitive Performance in a Mouse Model of Post-operative Cognitive Dysfunction

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Background: Acupuncture has been extensively used in clinical practice to treat cognitive impairment in stroke and dementia. Recent evidence suggests that acupuncture may also be helpful in reducing postoperative cognitive dysfunction (POCD), a common complication following surgery and hospitalization. While neuroinflammation and Alzheimer's disease (AD) pathology have been proposed as key factors in POCD development, the exact pathogenesis of POCD remains incompletely understood.

Objective: The aim of this study was to investigate whether electroacupuncture (EA) could improve cognitive function, suppress inflammation, and reduce AD-related pathological changes in a mouse model of POCD.

Methods: Twelve-week-old male C57BL/6N mice ([25 ± 3] g) were randomly divided into four groups: sevoflurane only (control), laparotomy only (LAP), laparotomy + acupuncture (LAP + EA), and laparotomy + ibuprofen (LAP + IBU, as a positive control). Mice in the acupuncture group received EA at Baihui (DU20) and Zusanli (ST36) acupoints after laparotomy for 5 or 12 d. Mice in the ibuprofen group were administered Ibuprofen (60 mg/[kg·d]) for 5 or 12 d after

surgery. Cognitive changes and pathological alterations were assessed. **Results:** Our data showed that laparotomy resulted in impaired associative memory, recognition memory, and executive functions in mice. Postoperative EA treatment attenuated these cognitive changes induced by laparotomy. EA also reduced tau phosphorylation in the mice's brains after laparotomy. Furthermore, EA treatment suppressed certain tau-related kinases and glial activation. The effects of EA were comparable to those of ibuprofen.

Conclusion: We have demonstrated the beneficial effects of EA in an experimental mouse model of POCD. The ability of EA to suppress neuroinflammation may contribute, at least in part, to its protective effect. In conclusion, EA may represent a potential non-pharmacological intervention for managing POCD.

Abstract submission # 277

Electroacupuncture Inhibits Inflammatory Response and HK2-mediated Warburg Effect in Rats with Acute Lung Injury

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Objective: To explore the effect of electroacupuncture on inflammatory response and hexokinase 2 (HK2)-mediated Warburg effect in rats with acute lung injury (ALI).

Methods: Male Sprague-Dawley rats were randomly divided into three groups: control, model and electroacupuncture groups ($n = 12$ each). Rats in both model group and electroacupuncture group underwent injection of lipopolysaccharides (LPS) at a concentration of 5 mg/kg into the tail vein to replicate the ALI model. While rats in the control group were injected with an equal volume of saline into tail vein. After the completion of modeling, rats in the electroacupuncture group received immediate electroacupuncture intervention. The acupoints Zusanli (ST36) and Chize (LU5) were applied bilaterally once a day, with each session lasting 30 min. This treatment was carried out consecutively for 5 d. Various parameters including levels of interleukin-1 β (IL-1 β) and transforming growth factor- β (TGF- β), the wet/dry weight ratio (W/D), lactate content, the mRNA and protein expression levels of HK2, as well as any inflammatory damage to lung cells and the damage score.

Results: In comparison to model group, electroacupuncture group exhibited a significant decrease in serum IL-1 β levels ($P < 0.01$) and a notable increase in TGF- β levels. The electroacupuncture treatment resulted in a reduction in inflammatory damage to the cellular structure of the lung tissue, with a more intact alveolar wall and a significant reduction in inflammatory cell infiltration in the alveolar stroma. The pathological score showed a significantly decrease ($P < 0.01$). The mRNA expression level of HK2 significantly reduced ($P < 0.01$), as was the lactic acid content ($P < 0.01$).

Conclusion: Electroacupuncture potentially reduced the inflammatory response and symptoms of ALI in rats by suppressing HK2-mediated Warburg effect, impeding release of pro-inflammatory factors and fostering release of anti-inflammatory factors.

Abstract submission # 180

Electroacupuncture Modulates the UCN2-Mediated cAMP-PKA Signaling Pathway for Therapeutic Intervention in Spinal Cord Injury: A Mechanistic Inquiry

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Objective: Spinal cord injury (SCI) represents a condition marked by high disability rates, which pathological process is protracted and

intricate. However, the regulatory effects and molecular mechanisms of electroacupuncture (EA) at different time points post-SCI remain unclear.

Methods: In the in vivo experiments, we induced SCI rats through a right-sided hemisection surgery on the dorsal side of the spinal cord at the T10 vertebral levels. We applied electroacupuncture at the Jiaji acupoints (EX-B2). Behavioral analyses and tissue collection were conducted at 1, 3, 7, 14, and 28 d post-injury. RNA sequencing was then performed. In the in vitro experiments, we extracted primary astrocytes to confirm the downstream signaling pathways identified in the RNA sequencing results.

Results: EA exerted an improvement in hindlimb motor function in SCI rats, concurrently reducing the expression of perilesional astrocytes at 3 d post-injury, limiting the extent of glial scar formation, and enhancing the expression of microglia. At 14 and 28 d post-injury, EA upregulated neuron expression and improved neurofilament morphology and myelin distribution. RNA sequencing outcomes revealed an upregulation of urocortin 2 (UCN2) expression post-injury, with the protein-protein interaction network indicating a close association between UCN2 and the downstream cAMP-protein kinase A (PKA) signaling pathway. Subsequent analyses demonstrated that EA inhibited the expression of UCN2, PKA, nuclear factor- κ B (NF- κ B), and N-methyl-D-aspartate receptor (NMDAR) at 1, 3, and 7 d post-injury in SCI rats, thereby alleviating inflammation. Additionally, EA increased the expression of UCN2, PKA, and cyclic AMP response element-binding protein at 14 and 28 d post-injury, promoting axonal growth. Immunofluorescence staining further confirmed the co-localization of UCN2 with astrocytes. In cultured astrocytes, the addition of a PKA inhibitor followed by UCN2 overexpression resulted in no changes in downstream genes NF- κ B, NMDAR, and CREB.

Conclusion: EA enhanced hindlimb motor function in SCI rats and ameliorates cellular morphology. The therapeutic underpinnings of EA appear to revolve around the regulation of the UCN2-mediated cAMP-PKA signaling pathway.

Abstract submission # 227

Electroacupuncture Promotes Osteogenesis via Activating the Wnt/ β -catenin Signaling Pathway in Aged Rats

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Objective: To explore the effects of electroacupuncture (EA) on senile osteoporosis in aged rats and investigate the underlying mechanisms.

Methods: This study included aged (24-month-old; $n = 16$) and young (3-month-old; $n = 8$) male Sprague-Dawley rats. Aged rats were randomized 1:1 to an aged control group (Aged; $n = 8$) and an EA treatment group (EA; $n = 8$). The 3-month-old rats served as young controls (Young). EA rats received EA applied on Zusanli (ST36), Sanyinjiao (SP6), Yanglingquan (GB34), and Xuehai (SP10) bilaterally for 30 min a day, 5 d a week, for 8 weeks.

Results: EA significantly increased serum markers of bone formation in aged rats. There was no significant difference in serum markers of bone resorption in EA and aged rats. Deterioration of bone mineral density (BMD) and trabecular bone architecture was observed in aged rats. EA significantly increased BMD of the left femur and L5 vertebral body in aged rats. Aging-induced deterioration of trabecular bone architecture was partially reversed in EA rats. Runx2 and Osterix mRNA and protein levels were significantly increased and PPAR γ was significantly decreased in bone marrow cells in EA compared to aged rats. mRNA and protein levels of core constituents of the Wnt/ β -catenin signaling pathway (Wnt3a, LRP5 and β -catenin) were significantly increased and Dickkopf 1 was significantly decreased in

bone marrow cells in EA compared to aged rats.

Conclusion: Electroacupuncture may prevent bone loss and deterioration in aged rats by promoting osteogenesis via a mechanism that may involve activation of the Wnt/ β -catenin signaling pathway. Electroacupuncture may represent a therapeutic option for senile osteoporosis.

Abstract submission # 223

Electroacupuncture Regulates Inflammation by Activating Vagus Nerve to Enhance Anti-tumor Immunity in Breast Tumor Mice

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Objective: The aim of this study was to explore the potential effect of electroacupuncture (EA) at ST36 on mice bearing breast tumor by regulating inflammation to enhance anti-tumor immunity via vagus nerve.

Methods: Female BALB/c mice were implanted with 4T1-luc2 breast tumor cells to establish murine mammary cancer model. Tumor growth was evaluated by tumor volume, weight and bioluminescence imaging. Inflammatory condition in serum and local tumor tissue was assessed by cytokines and hematoxylin and eosin staining. Proportion and function of CD8⁺ T cells, natural killing (NK) cells and myeloid-derived suppressor cells (MDSCs) were identified by flow cytometry and Western blot. In addition, the involvement of vagal efferent component was confirmed by choline acetyltransferase (ChAT) and c-Fos double labeling immunohistochemistry in dorsal motor nucleus of vagus. Subdiaphragmatic vagotomy was employed to determine if the effect of EA was mediated by vagus nerve.

Results: EA at ST36 reduced tumor volume and its solid weight within 22 d after implantation. Pro-inflammatory cytokines in tumor tissue, serum and local inflammatory infiltration were obviously attenuated after EA. Meanwhile, EA intervention significantly augmented the proportion and cytolytic function of CD8⁺ T cells and NK cells, along with a decline of the accumulation and immunosuppressive activities of MDSCs. At last, an increased c-Fos expression was observed in ChAT-positive neurons in DMV following EA and the ameliorate effect of EA was obviously blocked by subdiaphragmatic vagotomy.

Conclusion: EA intervention deferred the tumor progression in breast tumor-bearing mice by relieving inflammation and enhancing anti-tumor immunity, which was mediated by eliciting efferent vagus nerve activity.

Abstract submission # 193

Electroacupuncture Regulates Peroxisome Proliferator-Activated Receptor γ in the Spinal Dorsal Horn to Improve Paclitaxel-induced Pain

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Electroacupuncture (EA) is widely used as a pain-relieving method in Chinese medicine such as chemotherapy-induced neuropathic pain. Many studies have shown that peroxisome proliferator-activated receptor γ (PPAR γ) is an important target in pain. Chemokine (CXC motif) ligand 1 (CXCL1) and chemokine (C-C motif) ligand 2 (CCL2) expressed by astrocytes mediate pain in the dorsal horn of the spinal cord involving in neuropathic pain. However, the mechanism by which EA improves pain still needs further studies. In this study,

chemotherapy-induced pain was established by intraperitoneal injection of paclitaxel in C57BL/6 mice. In the EA group, bilateral Zusanli (ST36) and Huantiao (GB30) were manipulated with EA stimulation. GW9662, a PPAR γ antagonist was intraperitoneally injected 30 min before EA to assess the effect of GW9662 on EA. Mechanical allodynia was evaluated by pain behavioral testing with von Frey filaments. Immunoblotting, polymerase chain reaction and immunofluorescence were used to assess paclitaxel-induced biochemical changes in spinal cord dorsal horn. The results showed that EA significantly alleviated paclitaxel-induced mechanical hyperalgesia in mice. In the dorsal horn of the lumbar spinal cord, PPAR γ expression was elevated after EA treatment. Meanwhile, EA significantly reduced the increased mRNA levels of CXCL1 and CCL2 and downregulated GFAP and phosphorylation of nuclear factor- κ B (p-NF- κ B). GW9662 (PPAR γ antagonist) reversed the analgesic effects of EA and upregulated p-NF- κ B. Our study suggested that EA had analgesic effects on paclitaxel-induced pain in mice by inhibiting CXCL1 and CCL2 through PPAR γ /NF- κ B signaling pathway.

Abstract submission # 201

Electroacupuncture Relieved Visceral Hypersensitivity in Ulcerative Colitis Mice by Modulating the Excitability of Neurons in Dorsal Root Ganglia

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Ulcerative colitis (UC), a kind of inflammatory bowel disease, is characterized by chronic abdominal pain. Emerging evidence accumulated that acupuncture may be a potential effective treatment for UC. However, its underlying mechanism remains elusive. Studies have illustrated that visceral hyperalgesia caused by UC was closely related to the hypersensitivity of dorsal root ganglion (DRG) neurons. Therefore, this study was aimed to investigate the regulatory effects of electroacupuncture (EA) at Tianshu (ST25) and Shangjuxu (ST37) on colon-innervating DRG neurons to alleviate visceral nociception in UC mice. Mice were randomly divided into four groups, including control, model, ST25 and ST37. Our results showed that EA significantly attenuated dextran sulfate sodium (DSS)-induced colorectal lesions and alleviated the severity of inflammation as well as decreased visceromotor response to identified colorectal distention in UC mice. Importantly, according to the data from patch clamp recording, EA could modulate the excitability of DRG neurons by downregulating the amplitude, the firing rates and the max rising slope of action potential. Furthermore, the immunofluorescence results indicated that EA could reduce the expression of Nav1.8 in DRG neurons. Taken together, we presumed that EA treatment improved colon inflammation and hyperalgesia, potentially by downregulating enhanced neuronal excitability of colon DRG neurons through reducing Nav1.8 expression.

Abstract submission # 89

Electroacupuncture Relieves Chronic Pain by Inhibiting NGF/TrkA Pathway in Knee Osteoarthritis

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Objective: Knee osteoarthritis (KOA) is a highly prevalent, chronic joint disorder, with chronic pain as its typical symptom. The therapeutic effect of electroacupuncture (EA) on KOA pain has been well recognized clinically. Inhibiting nerve growth factor (NGF) and blocking the tropomyosin-receptor-kinase A (TrkA) receptor can improve pain states. The purpose of this study was to investigate whether EA could inhibit peripheral NGF/TrkA pathway activation to

relieve pain in KOA rats.

Methods: KOA was induced by intra-articular injection of monosodium iodoacetate (MIA) into the knee joint of rats. EA was applied to ipsilateral Dubi (ST35) and Neixiyan (EX-LE5) followed by comprehensive examination of the pain-related-behaviours, histology and molecular pathways in rats. Finally, intra-articular injection of NGF-7S and MNAC13 (anti-TrkA monoclonal antibody) were used to further illustrate the therapeutic effects of EA on KOA.

Results: EA treatment attenuated the pain behavior, retarded cartilage degeneration and decreased inflammatory cytokines in KOA rats. Mechanistically, EA decreased the proportion of TrkA in calcitonin gene related peptide (CGRP)-immunoreactive dorsal root ganglion (DRG) neurons and inhibited NGF/TrkA pathway in synovium to alleviate pain and cartilage degeneration.

Conclusion: These results revealed that EA exerted analgesic effect by inhibiting the sensitivity of nociceptors and decreasing the proportion of TrkA in CGRP-immunoreactive DRG neurons in KOA rats.

Abstract submission # 145

Electroacupuncture Trigeminal Nerve Stimulation and rTMS in Alone and Combination Prevent Cognitive Impairment and Amyloid Deposition in Transgenic Mouse Model of Alzheimer's Disease

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Emerging evidences from clinical and animal studies indicated electroacupuncture trigeminal nerve stimulation (EA/TNS) and transcranial magnetic stimulation (rTMS) may provide promising intervention efficacy in neurological disease such Alzheimer's disease (AD). This study aimed to demonstrate whether single intervention by EA/TNS or rTMS could slow down AD progression, and whether combined stimulation of the two strategies achieves better therapeutic effect than single stimulation. Two-month-old male AppNL-G-F mice were randomly divided into the 4 groups ($n = 6$ per group) and used for sham, EA/TNS, rTMS, and EA/TNS + rTMS treatments. Age matched male C57BL/6J wild-type mice were used as negative control. In single intervention, EA/TNS was conducted on Yintang (EX-HN3) and Baihui (GV20), the two acupoints that are innervated by the trigeminal nerve, and rTMS was delivered on the right dorsolateral prefrontal cortex. In the combined intervention, EA/TNS + rTMS were separately performed with one hour interval. Stimulations were performed once every other day for a total of four weeks, then with 3 sessions a week until the mice were 6 months old and animals transferred to neurobehavioral measurements (Y maze and Barnes maze). A subgroup of animals were sacrificed after 2 and 4 months treatment and brain tissue analyzed by immunohistochemistry. Remarkably, slower cognitive impairment and reduced amyloid deposition of AppNL-G-F mice was observed in all the 3 intervention groups than sham group. However, no significant difference was detected among single versus combined intervention, either by neurobehavioral or neuropathological measurements. Nonetheless, we cannot rule out the possibility that single versus combined intervention may act differently in other animal models or humans. In addition, long term or high frequency stimulation paradigms may also be considered in further investigations.

Abstract submission # 40

Enhancing Traditional Chinese Medicine Telemedicine with AI-Powered Tongue Diagnosis

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Nowadays, telemedicine has become a critical component of healthcare, expanding access for populations like the elderly and serving as a vital resource during global challenges such as the COVID-19 pandemic. This study leverages artificial intelligence to refine telemedicine practices within traditional Chinese medicine (TCM), focusing specifically on enhancing tongue diagnosis. The integration of AI for the recognition of tongue features aims to not only alleviate the clinical workload for practitioners but also to mitigate the impact of environmental factors such as lighting conditions or camera effects, including beautification filters, thereby enhancing the efficiency and quality of patient care. Building on this foundation, the research develops a novel dataset tailored specifically for AI applications in TCM telemedicine. This pioneering dataset is meticulously crafted for the unique demands of telemedicine in TCM diagnostics and eschews the need for specialized data acquisition equipment. By leveraging images of the tongue captured with ubiquitous devices like smartphones and computer webcams, the dataset is not only highly accessible and suited for telemedicine practices but also represents one of the most comprehensive compilations available in TCM. It includes detailed annotations of the tongue's surface features and is enriched with symptom annotations informed by TCM diagnostic principles. Additionally, the dataset incorporates extensive patient-specific data, including diagnosed diseases and demographic information. To utilize this dataset, this study applies advanced large-scale deep learning models to process and analyze the rich visual data from the tongue images. This sophisticated analysis is augmented by integrating demographic information with prompt learning techniques, enabling the AI to consider patient-specific context during diagnosis. This customized approach enhances the feature extraction process, making the AI model adept at identifying tongue features with a precision that surpasses existing models. The comparison to human TCM practitioners' assessments and the implications of these findings will be discussed.

Abstract submission # 1

Examining the Status of Acupuncture Research and Education

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Research data, funding and education have been identified as the main difficulties in Acupuncture research (AR) by the World Health Organization (WHO) and experts in the field. These barriers to the integration of Acupuncture and Herbal Medicine (AHM) in primary care, health coverage and accessibility are interconnected. AHM is a personalized medicine system and research methods applied by biomedical science (BMS) are insufficient in AHM research. This delays AHM integration as policy makers rely on research data for decision making. Changes in AHM education to unify degrees, establish biomedical science (BMS) pre-requisites, base the curricula on classical Chinese medicine (CCM) and offer research education, may produce AHM providers who deliver high quality AHM research and benefit all stakeholders. Raising the bar in AHM to offer a sole DAOM and a subsequent clinical and research PhD degree may be the next step in AHM education to improve the overall situation. This literature review explores the current state of AHM research and education to identify opportunities for improvement.

Abstract submission # 57

Experiences and Perceptions of Participating in Traditional Chinese Medicine Health Preservation Program for Depression: A Qualitative Study

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Background: Traditional Chinese medicine (TCM) health preservation shares theories similar to lifestyle medicine. Our recent pilot randomized controlled trial (RCT) confirmed the feasibility and preliminary effects of TCM health preservation program for depression (the Program). However, to better optimize the courses for the Program and enhance adherence to practice health preservation in daily life, it is necessary to understand participants' experiences and perceptions in depth.

Objective: This study aims to explore the participants' experiences and perceptions of participating in the Program.

Methods: A descriptive qualitative study underpinned by naturalistic inquiry was adopted as the research methodology. Purposive sampling was utilized to recruit those who are Hong Kong Chinese adults with moderate depression and have attended the Program between August 2023 and December 2023. Data were collected through focus group interviews and semi-structured individual interviews. Each interview was audio recorded, transcribed verbatim, and analyzed by conventional content analysis.

Results: Thirty participants (mean age: 45.2 years, 76.7% female), nineteen in six focus group interviews and eleven in semi-structured individual interviews, participated in this study. Four themes emerged: (1) surprises to the multi-components of the Program (e.g., TCM health preservation originally being not a single component); (2) unexpected benefits of the Program (e.g., cultivating interests and hobbies); (3) difficulties in practicing TCM health preservation (e.g., not understanding TCM health preservation terminology); and (4) strategies to optimize the Program and adherence (e.g., arranging more time for reviewing the session).

Conclusion: This study not only offers a deeper understanding of participating in the Program among Chinese adults in Hong Kong but provides strong evidence supporting the preliminary effects for different outcomes found in the pilot RCT, such as reducing depression, alleviating anxiety, and improving sleep quality. Optimization for the Program should be conducted in the future based on suggestions generated in the study.

Abstract submission # 225

Experimental Study on the Mechanism of Low-frequency Auricular Electroacupuncture Regulating Gastric Motility and Comorbid Depression in Diabetic Gastroparesis Rats

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Objective: The current study aimed to investigate the mechanism of auricular electroacupuncture to improve gastric emptying and depression-like behavior in diabetic gastroparesis rats.

Methods: Sprague-Dawley rats were randomly divided into the control group the model group the auricular electroacupuncture group and the sham auricular acupuncture group. Diabetes rats were induced by intraperitoneally injected with streptozotocin solution. After 6 weeks of treatment the rats in the auricular electroacupuncture group were given electroacupuncture at bilateral auricular point "stomach" once a day, 5 d a week for 2 weeks. The earlobe of the sham auricular acupuncture group was needled without electricity. The effects of acupuncture on depression like behavior in diabetic gastroparesis were assessed by using the open field test and the forced swimming

test. The gastric motility was investigated by gastric emptying rats. In addition, the protein and mRNA levels of corticotropin releasing factor (CRF) and tyrosine kinase receptor c-Kit were respectively detected by enzyme-linked immunosorbent assay and quantitative reverse transcription-polymerase chain reaction in gastric sinus tissue.

Results: Acupuncture effectively improved the depression-like behavior and the gastric emptying rate in diabetic gastroparesis rats. Additionally, it considerably reduced the mRNA and protein expression levels of CRF and increased the mRNA and protein expression levels of c-Kit in the gastric sinus.

Conclusion: Low-frequency auricular acupuncture had a significant, positive impact on gastric motility and depression-like behavior by modulating CRF and c-Kit in the gastric antrum tissue of diabetic gastroparesis rats.

Abstract submission # 30

Elephantopus scaber Extract as a Potential Anti-Hepatocellular Carcinoma Agent through PI3K/Akt Pathway Inhibition

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Elephantopus scaber, a globally renowned herb in the Asteraceae family, boasts a rich history of medicinal and edible applications. Despite the identification of various active compounds within this herb, comprehensive studies assessing its holistic potential remain limited. This research investigated the therapeutic capabilities of *E. scaber* extract in hepatocellular carcinoma (HCC). Initially, different extracts were prepared and subjected to in vitro screening for anti-HCC activity using the MTT assay. Results unveiled that the ethanol extract (EEES) inhibited HCC cell proliferation while exhibiting low toxicity to normal cells. Further exploration showed that EEES induced cell cycle arrest, apoptosis, and effectively inhibited cell metastasis. To elucidate the underlying mechanisms, a bioinformatics analysis employing a network pharmacology approach was utilized and identified the PI3K/Akt pathway as a key modulation for EEES's anti-HCC activities, validated through western blot analysis. In animal studies, EEES demonstrated the ability to inhibit HCC tumor growth in vivo with a high level of safety. In summary, our research positions *E. scaber* as a potent herb with anti-HCC activity and remarkable safety, offering promising prospects for the prevention and treatment of liver diseases, including HCC.

Abstract submission # 100

Exploring an Innovative Deep Learning Solution for Acupoint Localization on the Weak Feature Body Surface of the Human Back

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In current clinical practice, the localization of human acupoints relies extensively on the subjective experience of physicians. Therefore, despite being a crucial basic content of traditional Chinese medicine (TCM), acupoint localization has not been well expanded and promoted through intelligent means. Our goal is to explore an efficient and reliable solution for acupoint localization and recognition that addresses the shortcomings of subjectivity and standardization in this task. We focus on the weak feature body surface of the human back and propose an innovative approach that utilizes a deep learning network with a self-attention module for

global extraction of image features. This methodology differs from common convolutional neural networks which often lead to classification ambiguity in weak feature image tasks due to excessive cropping and scaling operations during feature extraction. Moreover, our self-constructed dataset of human back acupoints provides data support for model training. The localization task for the back acupoints of the subjects in the dataset strictly follows the national standard definition and is labeled by professional doctors of TCM to ensure data robustness and quality. Our preliminary experiments validate that our proposed network learns higher quality global image features, achieving an average accuracy level of 1 cm in the localization and recognition task of 84 acupoints on the back of the human body.

Abstract submission # 149

Exploring on Anatomical Structure of Yingu (KI10) and Ququan (LR8) Acupoint

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This study conducted an initial exploration of the anatomical structures of Yingu (KI10) and Ququan (LR8) acupoints, confirming the distinctiveness of their physical structures and sensory characteristics. The anatomical structures of the KI10 and LR8 are located around the “hilum” of muscle or bone. Hilum is the structure of blood vessels and nerves enter muscle or bone blood supply. The acupoint positioning summarized in ancient and modern literature. The exact match of the KI10 and LR8 “acupoint sensation” locations was defined by needling the different points and depths of ten volunteers. The anatomical structure of KI10 and LR8 was determined by microdissection of ten slides of fresh low limb anatomical specimens from adults. Microdissection revealed that KI10 point is the ‘hilum of muscle’ of the gastrocnemius medial head where the muscular branches and its accompanying vessels entering the muscle. LR8 is the ‘hilum of bone’ at the vessel supply of the medial condyle of tibia. When we acupunctured KI10, it appeared to have an “acupoint sensation,” the needle tip was in the ‘hilum of the gastrocnemius’ medial head. When we acupunctured LR8, it appeared to have an acupoint sensation, the needle tip was puncture in the hilum of the medial condyle of tibia. The determination of the physical anatomical structure of two points and their efficacy research provides a theoretical basis.

Abstract submission # 184

Exploring the Mechanism of Baduanjin Exercise Therapy for Osteoporosis Based on the Interaction Threshold of “Brain-Gut-Bone”

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Osteoporosis is considered an integral part of elderly people’s lives, and lack of exercise is often a major cause of overloaded bone loss. Although drug therapy is currently mainstream, the current diagnosis and treatment rates are low. Therefore, an ideal approach that focuses on both prevention and treatment of the disease is of great research and application value. As a mind-body exercise, Baduanjin emphasizes the interaction of multiple aspects such as body, mind and thought, and has lower requirements for physical and cognitive abilities of practitioners, making it easy to learn and practice. Therefore, it may be more suitable for the elderly and those who are physically weak. However, the potential mechanism is still not fully understood. The study explored the effects of Baduanjin on

osteoporosis within the framework of “Brain-Gut-Bone” interaction. We hypothesized that Baduanjin could modulate key pathways connecting the brain, gut and bone, influencing bone remodeling and density. This paper reviewed evidence on the role of the brain-gut axis in bone health, the impacts of Baduanjin on brain and gut function, and potential mechanisms by which improvements in brain-gut function could mitigate osteoporosis. In addition, with the advancement of brain imaging technology and omics technology, it is possible to further explore the “Brain-Gut-Bone” interaction mechanism of Baduanjin therapy for osteoporosis, combining macro bodily characteristics with biological markers such as metabolites, obtaining multimodal data including structured (numeric) and unstructured (image, waveform data), focusing on the immediate effects of Baduanjin exercise on the body, revealing the potential relationships and inherent patterns of change in “Brain-Gut-Bone” interactions, and eventually providing a paradigm for the scientific research and application of TCM “Pre-illness Treatment.” Our framework provides a theory to guide future research on complementary mind-body exercises for osteoporosis and other disorders caused by “Brain-Gut-Bone” dysregulation.

Abstract submission # 254

Factors Affecting Korean Medicine Health Care Use for Functional Dyspepsia in Korea

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Objective: Functional dyspepsia (FD) is one of the most common chronic gastrointestinal disorders that significantly reduce the quality of life. Korean medicine treatment including herbal medicine and acupuncture is frequently used in the clinical setting of East Asian traditional medicine. The purpose of this study was to analyze factors affecting Korean medicine health care (KMHC) use for FD.

Methods: Data from Korea Health Panel Survey 2017 were analyzed. Individuals aged > 19 years who were diagnosed with FD and used outpatient care were included. Multiple logistic regression analyses were performed to investigate the association of predisposing, enabling, and need factors with KMHC use for FD based on Andersen’s behavioral model. The best subsets of factors affecting KMHC use for FD were selected using stepwise procedure.

Results: Eventually, a total of 404 subjects were included in the analysis. In fully adjusted analysis including predisposing, enabling, and need factors, the study found that participants aged 65 years or older were less likely to use KMHC to treat FD than those aged 19 to 34 years (odds ratio [OR], 0.14; 95% confidence interval [CI], 0.02–0.93). Residents of Busan, Daegu, Ulsan, or Gyeongsang tended to use more KMHC to treat FD than those of Seoul, Gyeonggi, or Incheon (OR, 2.45; 95% CI, 1.02–5.88). Participants with private health insurance were more likely to use KMHC to treat FD than those without private health insurance (OR, 3.41; 95% CI, 1.02–11.42). In the prediction model for KMHC use of FD, gender, age, private health insurance, and stress were selected as the best subset of predisposing, enabling, and need factors (AUC, 0.709; 95% CI, 0.637–0.781).

Conclusion: The results of this study will aid in the decision-making of clinicians, researchers, and policymakers.

Abstract submission # 253

Electroacupuncture Relieved LPS-induced Sepsis in Rats by Fine-tuning Sympathoadrenal Medullary Pathway

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Acupuncture displays a great therapeutic effect on inflammatory illness by activating autonomic nerve-mediated anti-inflammatory pathways, such as the sympathoadrenal medullary pathway, but the mechanism remains unclear. How to precisely switch on

sympathoadrenal medullar pathway by electroacupuncture (EA) and exert a systemic anti-inflammatory effect is of great value for clinical acupuncture application. To answer this question, in vivo electrophysiological recording was used to explore the neuromodulatory rule of acupuncture stimulation in fine-tuning sympathoadrenal axis in rats. The cellular mechanism of EA-induced anti-inflammatory effect on sepsis rats was explored subsequently. We observed that 3 mA 20 Hz at ST25 was the optimal parameter in triggering sympathoadrenal axis, which significantly elevated the level of peripheral NE, and significantly improved the survival rate and model score of rats with LPS-induced sepsis model. Notably, the elevated NE activated macrophage $\beta 2$ adrenoceptor signaling which decreased the pro-inflammatory cytokines IL-6, IL-1 β , and TNF- α , and increased the levels of anti-inflammatory factor IL-10 by converting macrophage to M2 anti-inflammatory subtype. Overall, our results suggested that 3 mA 20 Hz at ST25 is the most optimized parameter for acupuncture in triggering sympathoadrenal axis to treat sepsis through NE-mediated macrophage ADRB2 signaling.

Abstract submission # 234

Five-Shu Acupoints—Anatomy, Applications, and Their Significance

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Acupuncture has been proven to be effective to treat numerous pathological conditions and malfunctions. However, substantial anatomical evidence for acupuncture points (APs) and meridians is still lacking, so the location of APs is relatively subjective and understanding of the biological mechanisms of acupuncture is limited. All these problems hinder the clinical applications and worldwide acceptance of acupuncture. Therefore, this study took Five-Shu APs as examples to explore their anatomical structure. To this end, two specimens of fresh adult human upper limbs were dissected using an advanced vascular perfusion-fixation method and then examined. The results show that all 30 five-Shu APs in upper limbs have their corresponding perforating skin vessels (PCVs). All specimens verify a 100% coincidence rate between APs and PCVs, indicating that PCVs might be a critical anatomical feature of APs. This study also provides the anatomic basis for locating APs objectively by the detection of PCVs. The findings could lead to a better theoretical understanding of mechanisms of acupuncture and the essence of meridians.

Abstract submission # 147

From Case to Evidence: A Secondary Analysis Approach to Acupuncture Reports

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Background: Following through on the goals of our poster presentation and standing-room-only workshop at SAR 2023, this proposal outlines a plan to conduct secondary analyses of acupuncture

case reports on pain management. We will extrapolate and interpret data adhering to CARE guidelines, thereby contributing to the evidence base in acupuncture research. The CARE guidelines provide internationally recognized standards for rigorous, high-quality case reports.

Objective: To perform secondary analyses on a dataset comprising 40–50 case reports on pain; develop a model for analyzing and interpreting data from structured acupuncture case reports; mitigate bias in case report data analyses; explore quantitative and qualitative including diagnostic reasoning and patient word clouds; categorize and analyze qualitative data, focusing on acupuncture's diagnostic approaches, treatment strategies, and styles; and investigate feasibility of larger datasets and predefined style definitions to improve inter-rater reliability.

Methods: After Data collection, analyses begin with ten publication-ready case reports in CARE format, including the standardized sections of introduction, case presentation, diagnostic reasoning, treatment, outcome measures, and discussion/conclusion, and then expand to similar sections from ACU-Track's Clinical Registry comprising 30–50 patient reports; a unique identifier system is used to track data organization and analysis. Key methods used include: secondary data analysis of existing case reports; qualitative and quantitative methods for data interpretation; mapping of diagnostic reasoning and patient feedback; normalizing data using spreadsheets.

Discussion: The expected outcomes will include: a comprehensive analysis model for acupuncture case reports suitable for large datasets; enhanced understanding of acupuncture's effectiveness in pain management; improved methodologies for analyzing qualitative data; contributions to the standardization of data reporting in acupuncture research. by adopting a systematic approach to secondary analyses, we hope to enhance clinical practice and research methodologies in acupuncture and establish a model for practice-based evidence-building.

Abstract submission # 286

How Recent Science Validates TCM Principles and Acupuncture's Effectiveness: Countering the Nocebo Effect

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The placebo effect plays a significant role in the effectiveness of all types of medical interventions, from surgeries to acupuncture. However, acupuncture faces a nocebo-like effect where patients can attribute clinical improvements to chance rather than treatment. This skepticism can be due to the widespread belief that acupuncture has no scientific basis. Recent scientific advances in multiple fields enable measurement of acupuncture's effects on cellular responses, entire physiological systems, and even previously vague concepts such as "well-being." Acupuncture researchers know this, but the lay public is largely unaware of this evidence. In this presentation, I expand on the following Complexity Science and Systems Biology has stood out as potent tools in supporting complementary and alternative medicine since at least 2007. Complexity science allows us to quantify such phenomena as nonlinearity and feedback loops, which are relevant to acupuncture. The relatedness of organ systems is a main teaching in traditional Chinese medicine (TCM) and is reflected in Systems Biology. Stress affects many systems in the body. The ability to quantify subtle autonomic activity and precise cortisol levels allows for the measurement of acupuncture's effects on the stress response and vagal enhancement. The goal of longevity is a pillar of TCM and is now explained by the recent field of longevity science, where many of acupuncture's effects on cells, vagal activity, and metabolism become relevant. Recent discoveries in Immunology Research include vast networks of detailed cellular messengers, peripheral pain receptors, and autonomic feedback loops, all of which

are affected by acupuncture needling. The Mind/Body Divide never existed in TCM and is now starting to dissolve in modern science with the pervasive involvement of inflammation in mental conditions from Alzheimer's disease to depression: Repositioning acupuncture as an evidence-based treatment might encourage patients to seek treatment and also appreciate the positive results they experience.

Abstract submission # 72

Huatan Sanjie Formula Enhances the Function of Regulatory T Cells by Upregulating the Expression of Cosignaling Molecules to Improve Immune Imbalance in Mice with Graves' Disease

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Objective: Graves' disease (GD) is a common clinical autoimmune disease characterized by diffuse goiter and hyperthyroidism. Huatan Sanjie formula (HTSJF), a Chinese herbal compound, can significantly reduce thyrotropin receptor antibody (TRAb) levels and restore the immune disorder, but the pharmacological mechanism is unclear. This study aimed to explore its mechanism in improving immune imbalance in mice with GD.

Methods: The GD animal model was prepared by intramuscular injection of Ad-TSHR289 recombinant adenovirus to BALB/c female mice. The GD mice were randomly divided into 3 groups: model (GD) group, methimazole (MMI) group and HTSJ group. Mice in the MMI group was given methimazole suspension at a dose of 5.2 mg/[kg·d], and the HTSJ group was given HTSJ decoction at 7.02 g/[kg·d]. After treatment for 4 weeks, the levels of serum T4 and TRAb were detected by radioimmunoassay. The ratio of CD4⁺ T cells to regulatory T cells (Treg) and the expression of PD-1 and ICOS on Treg were detected by flow cytometry, and mRNA expression was detected by quantitative reverse transcription-polymerase chain reaction. The level of serum IL-17A was detected by liquid suspension chip.

Results: After the intervention, the contents of T4 and TRAb decreased significantly; goiter and hyperemia decreased significantly in the HTSJ group. Spleen index and CD4⁺ T cell ratio were significantly decreased. The mRNA expressions of Foxp3, TGF-β1, IL-10 and CTLA-4 were increased. Compared with the GD group, ICOS and PD-1 expression in Treg of the HTSJ group showed an upward trend. Serum IL-17A level was significantly decreased.

Conclusion: Method of resolving phlegm and dispersing stasis may improve the immunosuppressive function of Treg, inhibit the proliferation and activation of CD4⁺ T cells, inhibit Th17 proinflammatory cytokine IL-17A, correct the abnormal immune tolerance of GD mice, and may indirectly inhibit the thyroid angiogenesis of GD mice by up regulating the expression of Treg co signaling molecules (e.g., ICOS, PD-1, CTLA-4) and immunosuppressive cytokines (e.g., IL-10).

Abstract submission # 124

Implementation and Feedback of Knee Health Education and Self-Help Interventions among Older Adults with Knee Osteoarthritis in Community Settings

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Background: Knee osteoarthritis is a prevalent and significant health problem faced by middle-aged and older adults. Education on lifestyle changes and knee pain management, including dietary management, acupressure, massage therapy, stretching, and muscle strengthening exercises, has been examined in previous clinical trials. However, qualitative feedback from real-world participants has rarely been

collected.

Objective: This project aimed to evaluate the implementation of knee health education in real practice and gather feedback from older adults. **Methods:** We adapted the previous research intervention protocol and implemented a knee health education course in the community, in collaboration with elderly centers organized by non-governmental organizations. From December 2022 to December 2023, a registered nurse delivered 10 seminars on knee osteoarthritis pain management. The class size ranged from 10 to 20 participants, and the seminars were conducted at 9 elderly centers under 7 non-governmental organizations. Qualitative data were collected from participants after each seminar through interviews or questionnaires.

Results: Three major themes that would help the participants increase their compliance with knee health education were identified from the feedback. First, the participants perceived that a combination of all four self-help interventions taught in the seminar showed the most beneficial effect and enhanced their compliance, while a single intervention was least appealing. Second, the seminars should be held on a regular basis or have more sessions to reinforce and verify their learning. Finally, providing some free samples of accessories such as acupressure rods or aromatherapy ointments would be helpful for initiating the self-help interventions.

Conclusion: This study allows us to better understand the implementation of knee health education and multifaceted self-help interventions in the community.

Abstract submission # 51

Implementation and Outcome of an Integrative Approach Including Acupuncture in a Federally Qualified Health Center in USA Using the Quadruple Aim

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Objective: To assess the outcome of incorporating an integrative approach including acupuncture in a federally qualified health center (FQHC) based on the quadruple aim.

Methods: Observational retrospective chart reviews of 500 patients, age ≥ 18, who received four weekly or bimonthly integrative approach to care including acupuncture by an East-West trained acupuncturist in an outpatient FQHC, Axis Community Health, from January 2020 to July 2022. The quadruple aim was assessed by: (1) patient and (2) provider satisfaction assessed via 5-point Likert Scale surveys; (3) mean pain score (MPS) based on the visual analogue scale surveys; (4) cost analysis based on acupuncture visits, primary care provider (PCP) visits for non-pain indications, savings from emergency department (ED) one-year pre and one-year post initial interventions.

Results: Among 500 patients, 176 of them fit the inclusion criteria. Of the responses, (1) 31.2% of patients reported satisfied, 63.6% very satisfied, 2.6% very dissatisfied, and 2.6% remained neutral. (2) Eight of ten referring providers considered acupuncture an added value to the health center while two reported neutral. (3) Reduction of 36.2% MPS from the baseline Time point 1 (mean = 5.8; SD = 1.8) to Time point 4 (mean = 3.7; SD = 2.5) ($P < 0.01$). (4) Reduction of PCP pain visits from 2224 to 1066 or 48% of appointments for non-pain related PCP visits became available. Reduction in ED visit by individual mean from 0.35, one-year pre, to 0.176, one-year post ($P = 0.0026$). A 44% total reduction of ED visits from 138 to 77. Cost analysis based on ED cost savings (\$132,248), sustained PCP earnings (\$208,625.28), acupuncture revenue (\$434,589.10) yielded a cost benefit of \$775,462.38.

Conclusion: Patients of a FQHC may benefit from acupuncture as part of a comprehensive integrative approach. Application of the

quadruple aim showed a net positive with improved patient health outcomes by reducing MPS, positive patient satisfaction, improve primary care provider access, and a net positive cost benefit.

Abstract submission # 185

Improving the Effectiveness of Assessment in an Acupuncture Programme at a South African University

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Objective: The importance of assessments in professional acupuncture higher education cannot be over-emphasised, the reason is that assessments not only promote students' learning but also evaluate students' competencies, particularly in the field of acupuncture. However, there is a distinct lack of research focusing on assessments in acupuncture programmes in South African (SA) context. This study aimed to consolidate for higher education institutions in SA that the assessments in their acupuncture programmes are valid and reliable, the Revised Bloom's Taxonomy was utilized as its theoretical lens to understand and analyse students' views and experiences of an acupuncture programme at a higher education institution in SA.

Methods: Qualitative single case study design within an interpretivist paradigm was employed. Purposive Sampling Strategy was utilized to recruit participants from a public university in SA. Ten participants were selected for this study. Thematic analysis was utilized in this study.

Results: The findings highlighted that the participants acknowledged the importance of assessments in the acupuncture programmes. They reported that it was necessary for lecturers to utilise diverse assessment forms and approaches in teaching to accommodate content knowledge. The findings further suggested the significance of frequent assessment in promoting students' learning.

Conclusion: No specific form of assessments is superior to one another in the context of acupuncture educational programme. Appropriate assessment techniques should be selected to meet the purpose of the assessment in this context.

Abstract submission # 114

Incorporating Acupuncture within an Integrative Model of Care to Address Health Complexity amongst Marginalised Populations: Insights from a Community Health Service

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Objective: In Australia, as in other developed nations, marginalized populations have lived experience of exclusion which impacts their wellbeing through compounded economic, social, health and early life disadvantage. Evidence showed that marginalized populations have consistently unmet health needs and poor health service engagement, additional to histories of negative health seeking experiences. Emergent models of interdisciplinary primary healthcare inclusive of traditional, complementary and integrative medicine (TCIM) incorporating acupuncture therapy, that take a comprehensive view of the health and social needs of marginalized people, hold promise for engaging marginalized groups in consistent and coordinated healthcare that is integrative and inclusive.

Methods: This original research employed a case study focus to investigate multiple stakeholder perspectives on the implementation of an integrative model incorporating acupuncture within a primary health care (PHC) setting for marginalized participants. The explanatory sequential design highlights focus group fieldwork conducted with patient, practitioner and management cohorts engaged with a case study health service. Qualitative analysis of focus group

data explored emergent themes through in-depth thematic analysis.

Results: Focus group results provided rich data for the development of concepts, themes and sub-themes. Patient-consumer focus group themes were grouped under the concepts: initiating access to healthcare, engaging with integrative services and reporting experiences of health seeking. Themes from practitioner and service provider focus groups were presented together under the concepts: visioning inclusive values, implementing integrated health and social care and Measuring success, replicating a unique model.

Conclusion: This original research explores engagement with acupuncture amongst marginalized groups within integrated PHC, from multiple stakeholder perspectives. Key findings outline the complex circumstances that impact marginalized individuals' experiences of health service engagement, providing insight into the acceptability of expanding the scope of healthcare to address health and social complexity amongst marginalized populations through supporting interdisciplinary, comprehensive and inclusive approaches to PHC.

Abstract submission # 256

Inhibitory Effect and Mechanism of Trans-acutaneous Vagus Nerve Stimulation in LPS Gut Injection-Induced Neuroinflammation Model Mice

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Objective: A neuroinflammatory mouse model was established by injecting lipopolysaccharide (LPS) through the gastrointestinal myenteric layer in C57BL/6J mice to observe the effects of trans-acutaneous vagus nerve stimulation (TAVNS) on the number and morphology of microglia and astrocytes as well as the levels of neuroinflammatory factors, and to explore the neuroprotective effects of TAVNS.

Methods: C57BL/6J mice were used to establish a mouse model of neuroinflammation by LPS gut injection. Electroacupuncture was connected to the right ear of mice at the cavitas conchae, using 20 Hz, 0.1 mA, continuous wave. The treatment was performed once and lasted for 20 min, and then LPS was injected after electroacupuncture. The mice were sacrificed 24 h later, and then the number and morphology of microglia were checked and astrocytes with Iba1, CD68 and glial fibrillary acidic protein (GFAP) expression were detected by immunofluorescence staining; 2D skeletal images of microglia in the hippocampus were detected by Fiji-AnalyzeSkeleton; enzyme-linked immunosorbent assay and reverse transcription-polymerase chain reaction were used to detect the expression of interleukin (IL)-1 β , IL-6, tumor necrosis factor- α (TNF- α), and IL-18 in mouse hippocampus to observe neuroinflammation. Statistical analysis was performed using GraphPad Prism 7.

Results: Microglia in the control group were highly branched, with elongated branches and little overlap between branches; in the LPS group, the number of microglia branch ends was reduced, the number of microglia branch ends decreased ($P < 0.05$), the number of branches shortened significantly ($P < 0.001$). After TAVNS the cell branches became longer than in the model group ($P < 0.001$), and the number of branch ends became more ($P < 0.05$). The expression of IL-1 β , IL-6, TNF- α , and IL-18 in hippocampus was increased after LPS gut injection ($P < 0.05$). TAVNS could significantly reduce compared with LPS group ($P < 0.05$).

Conclusion: LPS gut injection can induce neuroinflammation in mice and TANVS can reduce the number of activated microglia and astrocytes, inhibit microglia activation and inhibit the expression of neuroinflammatory factors IL-1 β , IL-6, TNF- α , and IL-18.

Abstract submission # 104

Integrating Patient-centered Treatment into Acupuncture

Clinical Research

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In the new era, the traditional clinical research model of acupuncture and moxibustion is facing the need for innovation and development. In this paper, we discussed the concept of “patient-centered” treatment and explore its integration with the acupuncture theory, and its practical application in clinic. We begin by reviewing the development of the concept of “patient-centered” and its application in clinical research both domestically and internationally. Then, we identified effective methods to improve patients' involvement in the trials from the perspective of relevant guidelines and research protocols. This article focuses on the application and operational feasibility of the “patient-centered” treatment concept in acupuncture clinical trials, and provides an in-depth analysis of the current development. The article aimed to provide innovative thinking for clinical research on acupuncture and moxibustion, to promote the modernization and high-quality development of acupuncture and moxibustion clinical research by adhering to the principle of “focusing on the needs of patients and orienting to their health,” and to provide a reference for the innovative development of traditional medicine.

Abstract submission # 260

Integrating Traditional Chinese Medicine with Triboelectric Nanogenerators for Self-Powered Electroacupuncture

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Objective: The integration of traditional Chinese medicine (TCM) practices with modern technologies continues to yield innovative breakthroughs across diverse domains. This study explored a novel amalgamation of acupuncture, a well-established TCM technique, with triboelectric nanogenerators (TENG), a cutting-edge energy harvesting technology. The focus is on transforming the coiled head of acupuncture needles into a multifunctional sensor capable of harnessing mechanical energy provided by the practitioner through the triboelectric effect.

Methods: Our approach involved the design and fabrication of a TENG sensor on the coiled head of acupuncture needle. The sensor comprised a triboelectric layer of polydimethylsiloxane (PDMS) infused with multi-walled carbon nanotubes (MWCNTs), an insulating layer, and a conductive layer. This integration allowed the conversion of mechanical energy generated from acupuncture stimulation into electrical energy, facilitating self-powered electroacupuncture.

Results: The sensor is distinguished by its high compressibility, durability, and sensitivity to mechanical stimuli. Through rigorous experimentation, we showed that mechanical stimulation activated the TENG sensor, generating electrical power and enabling the development of self-powered electroacupuncture systems. This dual functionality not only augmented the therapeutic effects of electroacupuncture but also provided a self-sustaining energy source for the treatment process.

Conclusion: This research represents a convergence of ancient TCM wisdom with state-of-the-art innovations in energy harvesting, paving the way for interdisciplinary collaborations between traditional

medicine practices and modern technologies.

Abstract submission # 71

Integrative Treatment for New-onset Type 2 Diabetes Mellitus in Pediatric Patients Post COVID-19 Infection: A Case Series

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The prevalence of pediatric diabetes, accompanied by diabetic ketoacidosis (DKA), has markedly increased after the COVID-19 pandemic. However, therapeutic options for children and adolescents with new-onset diabetes remain limited. This study presented three pediatric patients with newly diagnosed type 2 diabetes mellitus (T2DM) following COVID-19 infection, who were treated using an integrated approach of traditional Chinese medicine (TCM) with conventional treatment and achieved complete remission. Three patients, aged 3 to 14, were diagnosed with DKA and new-onset of T2DM after COVID-19 infection. The common clinical manifestations included polydipsia, polyphagia, yellow greasy tongue coating, and a wiry, rapid pulse. TCM syndrome differentiation indicated the presence of middle-Jiao damp-heat pattern in these patients. Alongside regular subcutaneous insulin injections or insulin pump therapy (12.5–23.0 U/d), patients received the modified Huangqi Shigao decoction, which consisted of herbs such as Huangqi, Shigao, Huanglian, Dahuang, Tianma, Zhimu, Danshen, and Xixin. During the integrated treatment, a gradual reduction in insulin regimen (3 U/d) was implemented until complete cessation. Additionally, berberine hydrochloride tablets were prescribed at a dose of 0.4 g, bi-daily, in addition to the routine medical care. After 4 months of integrated treatment, all patients exhibited the normal levels of haemoglobin A1c and blood glucose with the discontinuation of conventional diabetes treatment. Subsequent follow-up periods (1–6 months) showed that the patients had normal blood glucose levels, as well as the restoration of insulin sensitivity and β -cell function as evidenced by the homeostasis model assessment of insulin resistance test. This is the first report that demonstrates the integrative treatment in reversing pediatric diabetes following COVID-19 infection.

Abstract submission # 130

Interpretation and Visualization of the Results of Systematic Reviews and Meta-analyses of Traditional Chinese Medicine: From the Perspectives of Clinicians and Patients

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Background: Numerous systematic reviews (SRs) and meta-analyses on traditional Chinese medicine (TCM) have been published. Results of these SRs and meta-analyses are often presented in professional terms, using relative risk, mean difference, forest map, etc, impeding the evidence-based decision-making process in TCM clinical setting, as the patients and TCM clinicians in China are reported to have limited literacy of evidence-based medicine. Thus, a more innovative way for interpreting and visualizing the results from SRs and meta-analyses on TCM is warranted.

Objective: To develop a new method for interpreting and visualizing the results of SRs and meta-analyses on TCM.

Methods: SRs and meta-analyses on TCM were systematically

searched from four Chinese databases from January 2022 to January 2023. The included articles were extracted and analyzed. Based on the different perspectives of patients and TCM clinicians, the results were visualized in multiple forms, including tables, graphics, voice, and video.

Results: A total of 204 eligible SRs and/or meta-analyses published in core Chinese academic journals were finally included. Common topics of the included articles covered Chinese medicine, TCM prescription, acupuncture and massage. The interpretation and visualization results are accessible on: <https://ebmoftcm.whuzhmedj.com/>. Patients and TCM clinicians could access personalized visualization results after registering and logging into the website.

Conclusion: This study developed an innovative database for interpreting and visualizing the results of SRs and/or meta-analyses on TCM. The findings will promote the implementation of evidence-based TCM practice.

Abstract submission # 142

Intra-oral Acupuncture Treatment for Obstructive Sleep Apnoea with Snoring: A Case Series

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While obstructive sleep apnea (OSA) affects 50% of men and 25% of women in the middle-aged population, approximately 50% of OSA patients do not adhere to continuous positive airway pressure treatments because of the disadvantages, including dry mouth, noises, and uncomfortable masks. The present study aimed to demonstrate preliminarily the effectiveness of intra-oral acupuncture to relieve OSA symptoms. While prior studies on acupuncture for OSA exist, a consensus on prime needling locations to treat the condition has not been reached. Intra-oral acupuncture is unlike traditional acupuncture treatments as it provides exact access to intraoral muscles, such as the levator veli palatini and genioglossus muscles. To investigate the effects of intra-oral acupuncture, head and neck regions in patients with OSA, four patients diagnosed with OSA were treated with local acupuncture, including intra-oral needling, to stimulate the upper airway dilator muscle. Clinical improvements were evaluated with the apnoea-hypopnoea index (AHI), obstructive apnoea-hypopnoea index (oAHI), snoring, and oxygen desaturation index (ODI) using a portable sleep monitoring device. After 10 treatment sessions, all patients showed improvement in the AHI and oAHI, and most of the patients showed decreased ODI and snoring. These results suggested that acupuncture of the intra-oral and head regions may be effective at improving the symptoms of OSA.

Abstract submission # 62

Introducing Loving-kindness Meditation to Patients with Chronic Musculoskeletal Pain

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Background: Mindfulness meditation is an essential component in mind-body exercises like Tai Chi and Qigong. Loving-kindness meditation (LKM), which is emphasized in Buddhism, has been shown to reduce pain intensity and disability and improve trait self-compassion and interoceptive awareness. Patients with chronic pain are often presented with disconnection, negativity and distress. Therefore, introducing LKM to people with chronic musculoskeletal pain is crucial and proven effective for relieving pain.

Objective: These two-workshop series aimed at preliminarily evaluating the LKM in relieving their chronic pain with new pain insight by comparing the two-arrow metaphor with pain neuroscience.

Methods: Twenty participants were invited to join two sessions of workshop, with 1 hour each, two weeks apart. Before the first session of the talk and after 2 weeks, questionnaires for accessing pain intensity and psychological distress were distributed. A guided meditation of LKM was conducted for 15 min. Participants were asked to practice the meditation daily for 2 weeks. Training log was given to monitor the compliance.

Results: About 70% (14 out of 20) of participants reported a decrease in pain score. The total pain score change in median is -3.5 ($n = 20$, $P = 0.002$), indicating a reduction in their pain intensity after 2 weeks of practice. Two participants reported no change and 4 reported a increase in pain score (+1 to +4). One (5%) participant reported a reduction of more than 12 points in pain score; and one dropped from 17 to 5 (with the median drop being 2.5). Eleven participants experienced a decrease more than the median.

Conclusion: LKM appears to be effective in relieving chronic pain in as brief as 2 weeks.

Abstract submission # 111

Key Features for Determining Patterns of Patients with Functional Dyspepsia Using Machine Learning

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Objective: Pattern identification provides a rationale for understanding a collective set of symptoms and signs. The aim of this study was to extract features for determining patterns through supervised machine learning on real-world data of patients with functional dyspepsia (FD), simultaneously applying unsupervised machine learning method and comparing the distinct features with the former analysis.

Methods: A total of 153 patients with FD who visited clinics participating in our study were requested to answer Standardized Tool for Pattern Identification of Functional Dyspepsia questionnaire (STPI-FD). We normalized the original data into Z-scores, calculating mean and standardized deviation of each patient's answers. From this data, we utilized random forest method to extract features for distinguishing patterns of patients. Furthermore, we applied principal component analysis and k -means clustering method to divide subgroups with similar patterns and conducted independent samples t -test to reveal features showing significant difference between those subgroups.

Results: The main features for deciding patterns using random forest method were "small amount of food intake and easily getting full," "pale or sallow face," and "upper abdomen pain getting worse when pressed." Applying k -means clustering, we could divide the patient data into 2 clusters; one cluster with 70 patients showing excess pattern tendency; another cluster with 83 patients with deficiency pattern tendency. The average Z-score of the questionnaire item "stuffy feeling at upper abdomen with sporadic severe pain" was significantly higher in excess pattern-dominant subgroup, while the score of the items assessing patients' breath, complexion and drowsiness were higher in deficiency pattern-dominant subgroup.

Conclusion: Through supervised learning, we identified main features for the conventional pattern identification. Additionally, utilizing unsupervised learning techniques, we proposed a new approach to pattern recognition for FD patients based on real-world data. This study will be helpful in further understanding decision-making process on patterns of FD patients.

Abstract submission # 275

Long-term Tuina Protect Gastrointestinal Function and Inhibit the Occurrence of Gastroparesis through Piezo2-5-HT Pathway

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Objective: To investigate the effect of long-term Tuina on the gastrointestinal function of diabetes mellitus (DM) rats, and the regulatory effect of piezo2 ion channel in the protection of gastrointestinal function by long-term Tuina.

Methods: Streptozotocin solution and high-fat and high-sugar diet were used to induce diabetic rats. After 6 weeks of feeding, diabetic gastroparesis rats were developed. After successful modeling of DM, Tuina treatment was performed for a total of 30 times, each lasting 20 min. Gastric emptying rate and small intestinal propulsion rate were measured and histopathological examination was detected by hematoxylin and eosin (HE) staining. Intestinal energy metabolism was detected by biochemical analysis. The mRNA and protein expressions of calmodulin (CaM) and myosin light-chain kinase (MLCK) in gastric and small intestinal tissues were detected by reverse transcription-polymerase chain reaction (RT-PCR) and Western blot. Intestinal 5-hydroxytryptamine (5-HT) content was measured by enzyme-linked immunosorbent assay. The expressions of Piezo2 and 5-HT4R mRNA and protein in small intestine were detected by RT-PCR and Western blot. Immunofluorescence staining was used to detect the expression of Piezo2 and 5-HT in small intestinal tissue.

Results: Compared with the model group, the gastric emptying rate and small intestinal propulsion rate of the treatment group were significantly increased ($P < 0.01$). In addition, the HE staining of the stomach and small intestine was significantly improved after Tuina treatment. The activities of Ca^{2+} - Mg^{2+} -ATP and CS in the small intestine were significantly increased ($P < 0.01$). The mRNA and protein expressions of CaM and MLCK in the stomach and small intestine were significantly increased ($P < 0.01$). Meanwhile, the content of 5-HT in small intestinal tissue increased significantly after Tuina treatment ($P < 0.01$). The expressions of Piezo2 and 5-HT4R mRNA and protein in small intestine were significantly increased ($P < 0.01$).

Conclusion: Long-term Tuina can protect the function of the stomach and small intestine and inhibit the occurrence of gastroparesis in DM rats, which may be achieved by Piezo2-5-HT pathway.

Abstract submission # 14

Management of Menstrual Irregularities in a Patient with PCOS Using Traditional Chinese Medicine—A Case Report

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Polycystic ovarian syndrome (PCOS) is the most prevalent female hormonal disorder in the reproductive age and the primary cause of infertility in the United States. Individuals with PCOS often explore complementary and integrative healthcare due to personal values, beliefs, or dissatisfaction with available biomedical treatments, such as drug side effects, poor clinical outcomes, or economic burden. While studies examining the safety and efficacy of acupuncture and Chinese herbal medicine for PCOS exist, limited case reports integrating multiple interventions are available. In this retrospective case report, we present a 25-year-old woman who received traditional Chinese medicine (TCM) treatments for menstrual irregularities due to PCOS. One year prior to receiving TCM treatments, she had experienced secondary amenorrhea and was prescribed Provera to induce her period. Tests revealed elevated testosterone levels and multiple bilateral follicular cysts, leading to the diagnosis of PCOS. She received acupuncture treatments every 1–3 weeks and was prescribed Baohe Wan, Guizhi Fuling Wan, and Zhechong Yin. Outcome measures included menstrual cycle length, blood work, pelvic ultrasound, and HRQoL questionnaire for PCOS-43. After 6 acupuncture treatments combined with herbal formulas, patient

started to menstruate naturally without the use of Provera. Overall, our study suggested that acupuncture and Chinese herbal medicine may be effective in improving menstrual cycles, regulating hormone imbalance and improving quality of life in patients with PCOS.

Abstract submission # 31

Mapping the Clinical Practice of Traditional, Complementary and Integrative Medicine in Oncology in Western Countries: A Multinational Cross-sectional Survey

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Objective: Cancer patients frequently seek complementary therapies alongside biomedical treatments, with acupuncture gaining recognition from leading oncological associations. However, evidence describing the adherence of traditional complementary and integrative medicine (TCIM) practitioners to current guidelines and evidence-informed practices when treating cancer patients is limited.

Methods: An international online survey was designed to assess demographical data, clinical practices, and information sources among TCIM practitioners in Austria, Germany, the United States of America, Australia, and New Zealand.

Results: A total of 404 respondents participated, with 62.9% actively treating cancer patients. Participants were predominantly acupuncturists and herbalists (57.1%), had an average of (16.8 ± 9.9) years of clinical experience, and treated a median of 2 (1, 4) cancer patients weekly. Breast cancer constituted 61.8% of cases in TCIM clinics. Concurrent administration of TCIM treatments with cancer-specific therapies was common (39.9%), aligned with the primary goal of alleviating treatment-related side effects (52.4%). However, only 28.0% of respondents maintained communication with the treating oncologist. The practitioners in our study sample identified pain management as most effectively treated with acupuncture, while herbal medicine was perceived optimal for cancer-related fatigue. Information sources included certified courses (33.1%), online databases (28.3%), and a preference for expert opinions (37.0%) over research publications (32.7%).

Conclusion: Acupuncturists and herbalists commonly treat cancer patients and integrate TCIM as supportive care in accordance with current oncological guidelines and focus on alleviating side effects. However, we could identify a significant communication gap between oncologists and practitioners. The survey underscores the role of TCIM practitioners in cancer care and identifies an important need for educational programs aiming to increase their research literacy.

Abstract submission # 171

Mechanism of Electroacupuncture in Remodeling Functions of Aging Skeletal Muscle Atrophy by Upregulating Sestrin2 to Promote Autophagy related Protein Degradation-Synthesis Balance

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Objective: To explore the mechanism of electroacupuncture (EA) on aging-induced skeletal muscle atrophy (ASMA) in mouse.

Methods: The aging mouse aged 18 to 20 months were used in this study. The acupoints Shenshu (BL23) and Zusanli (ST36) were

selected according to the World Health Organization Standard Acupuncture Nomenclature. The needles were connected into G6805-2 electronic acupuncture instrument and EA was conducted using consistent pulse, electric frequency 2 Hz, electric current 1 mA. The treatment was performed for 15 min on alternate days (3 d a week) totally for 2 months.

Results: The weight of soleus and gastrocnemius were significantly increased by EA ($P < 0.05$, EA/ASMA vs ASMA). Meanwhile, the activities of superoxide dismutase in serum and skeletal muscle were increased significantly by EA, while malondialdehyde in serum and skeletal muscle were decreased significantly ($P < 0.05$, EA/ASMA vs ASMA). Furthermore, the expression level of muscle factors related to autophagy, including Beclin1, P62, LC3-II, were increased by EA ($P < 0.05$, EA/ASMA vs ASMA), while, EA prevented aging-induced decline in phosphorylation of Akt and FoxO1 (regulatory markers for protein degradation) and counteracted aging-induced suppression of the phosphorylation of p70S6K and mechanistic target of rapamycin kinase (mTOR) (regulatory markers for protein synthesis). In addition, the expression level of muscle damage repair factors, including MyoD, Myogenin and eMyHC, were increased by EA ($P < 0.05$, EA/ASMA vs ASMA). Finally, the mRNA expression of Sestrin2 was increased in the muscle of EA/ASMA compared with ASMA ($P < 0.05$).

Conclusion: EA could ameliorate aging-induced skeletal muscle atrophy by upregulating Sestrin2 expression to promote autophagy, thereby regulating protein degradation-synthesis balance of Sestrin2/mTOR signaling pathway.

Abstract submission # 70

Mechanism of Huatan Sanjie Formula in Inhibiting Thyroid Angiogenesis in Graves' Disease

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Objective: Graves' disease (GD) is an organ-specific autoimmune disease characterized by diffuse goiter and secretory hyperfunction. Angiogenesis is the key pathological mechanism of goiter formation. Our previous work showed that Huatan Sanjie formula (HTSJF), a traditional Chinese herbal compound, can significantly reduce goiter, but the pharmacological mechanism is still unclear.

Methods: The GD animal model was prepared by intramuscular injection of Ad-TSHR289 recombinant adenovirus in BALB/c female mice. The modeling group was randomly divided into 3 groups ($n = 15$): model (GD) group, methimazole (MMI) group and HTSJ group. Mice in the MMI group was given MMI suspension at a dose of 5.2 mg/(kg·d), and HTSJ group was given HTSJF decoction at 7.02 g/(kg·d) for 4 weeks. The levels of thyroxine (T4) and thyroid receptor antibody (TRAb) in serum were detected by radioimmunoassay. Thyroid tissue morphology was observed by direct observation and hematoxylin and eosin (HE) staining. The microvascular density (MVD) was counted by CD34 immunohistochemical staining. CD34⁺-FGG immunofluorescence double staining was used to detect the permeability. The localization and expression of vascular endothelial growth factor A (VEGFA) were detected by immunohistochemical staining. The protein expressions of VEGFA, VEGFR2, AKT serine/threonine kinase 1 (AKT) and p-AKT in thyroid were detected by Western blot.

Results: After the intervention, the content of T4 and TRAb decreased significantly. Goiter and hyperemia decreased significantly in the HTSJ group. HE staining showed that the proliferation of follicular epithelial cells and the internal convex in the HTSJ group were reduced. HTSJF decreased thyroid microvascular density and permeability in GD mice. HTSJF inhibited the expression of thyroid

VEGFA and AKT in GD mice.

Conclusion: HTSJF may inhibit thyroid angiogenesis in GD mice by downregulating AKT/VEGFA/VEGFR2 signaling pathway, thereby ameliorating goiter. Further research and verification are still needed in the future.

Abstract submission # 280

Mechanism of Spinal Cord Cyclic GMP-AMP Synthase (cGAS)/Stimulator of Interferon Genes (STING) Signaling Pathway Involved in Acupuncture Analgesia

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Based on the inflammatory pain mouse model, this study investigated the involvement of the spinal cord cyclic GMP-AMP synthase (cGAS)/stimulator of interferon genes (STING) signaling pathway in acupuncture analgesia. Inflammatory pain of mice was induced by injecting 50 µL complete Freund's adjuvant into the right paw, resulting in decreased paw withdrawal thermal latency and paw withdrawal mechanical threshold, as well as paw swelling. quantitative reverse transcription-polymerase chain reaction (RT-qPCR) and Western blot analysis revealed increased expression levels of cGAS and STING in the spinal cord, along with elevated levels of tumour necrosis factor- α (TNF- α), interleukin (IL)-1 β , IL-6, and interferon (IFN)- β . After daily acupuncture at Zusanli (ST36) for 7 consecutive days, the pain and paw swelling were relieved. RT-qPCR and Western blot detection showed that the cGAS and STING expressions of spinal cord were decreased, and RT-qPCR detection showed that the expressions of spinal cord TNF- α , IL-1 β , IL-6 and IFN- β were decreased. Intrathecal injection of DMXAA (a STING agonist) eroded the analgesic effect of acupuncture and reversed the reduction of TNF- α , IL-1 β , IL-6 and IFN- β in the spinal cord. Intrathecal injection of C-176 (a STING inhibitor) enhanced the analgesic effect of acupuncture but eroded the inhibition of TNF- α , IL-1 β , IL-6 and IFN- β in the spinal cord by acupuncture. In addition, DMXAA and C-176 had no effect on the relief of paw swelling by acupuncture. Therefore, the spinal cord cGAS/STING signaling pathway may be the target of acupuncture to improve inflammatory pain and relieve central sensitization.

Abstract submission # 257

Medulla Tetrapanax Water Extract Ameliorate Bacterial Internalization and Inflammation in *Staphylococcus Aureus*-induced Mastitis in Human Mammary Epithelial Cell via MAPKs Signalling Pathway

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Objective: Mastitis is the primary cause of low adherence to exclusive breastfeeding. Medulla Tetrapanax (MT) is one of the most used traditional Chinese medicine herbs among lactating mothers in the world particularly in China for relieving mastitis and promoting lactation. Even though our previous study has demonstrated the antibacterial and anti-inflammatory effect of MT in murine macrophages, the effect of MT in mastitis remains to be investigated. We hypothesized that MT water extract possesses anti-

inflammatory and anti-bacterial effects by suppressing the generation of inflammatory mediators and SA internalization via the inactivation of mitogen-activated protein kinase (MAPK) pathway in mammary epithelial cells.

Methods: The anti-inflammatory and anti-bacterial properties of the MT water extract were examined using the *Staphylococcus aureus* (SA)-infected model in human mammary epithelial cells (HuMECs) by measuring cytokines (tumor necrosis factor alpha [TNF- α] and interleukin 6 [IL-6]) via enzyme-linked immunosorbent assay and colony-forming unit (CFU) by agar plate counting respectively. The underlying mechanism of MT water extract was also investigated.

Results: MT water extract significantly reduced the SA internalization and growth in HuMECs. MT water extract also dramatically inhibited SA-induced TNF- α and IL-6 expression in HuMECs at 2 and 24 h post-infection. Lastly, the regulatory mechanism of MT water extract exerted anti-inflammatory effect was related to MAPK inactivation.

Conclusion: Our results indicated that MT water extract mitigates SA-induced mastitis in HuMECs via inactivation of the MAPK signalling pathway. This provides preclinical evidence to support the use of MT water extract for mastitis management.

Abstract submission # 129

Meta-analysis of the Therapeutic Effect of the Different Traditional Chinese Medicine Treatment on Corona Virus Disease 2019

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Objective: To evaluate the efficacy of the current treatment traditional Chinese medicine (TCM) methods for corona virus disease 2019 (COVID-19).

Methods: China National Knowledge Infrastructure, Wanfang, PubMed and Embase were retrieve in computer searches. The search period was from the inception of the databases until April 2023, and included randomized controlled trials and cohort studies to evaluating the efficacy of Chinese herbal medicine in treating COVID-19. According to the efficacy of herbs, treatments were divided into three types: promoting lung detoxification, promoting lung detoxification and removing dampness, promoting lung detoxification, removing dampness and promoting qi. Meta-analysis was used to evaluate the efficacy and safety of the three types of treatments.

Results: Compared with conventional treatment, the method of promoting lung function and detoxification has significant advantages in shortening sputum production ($P < 0.01$), breathing difficulties ($P < 0.01$), and relieving pharyngeal pain ($P < 0.01$), but significantly prolonging diarrhea time ($P < 0.05$). Promoting lung detoxification and removing dampness had significant advantages in shortening the difference in appetite ($P < 0.05$) and relieving muscle pain ($P < 0.05$). The method of promoting lung detoxification, dispelling dampness, and promoting qi has significant advantages in shortening the difference in appetite ($P < 0.05$) and relieving cough and phlegm ($P < 0.05$).

Conclusion: The three commonly used methods had obvious curative effects on COVID-19, providing evidence for the Tongzhi method of epidemic diseases. Promoting lung and detoxifying was suitable for patients with strong physical constitution and serious phlegm heat, and should be used with caution for patients with weak spleen and stomach. Promoting lung detoxification and removing dampness was biased towards in promoting spleen circulation and removing dampness, which had a significant effect on the symptoms of dampness obstruction. The method of expelling lung, detoxifying, removing dampness and promoting qi could dredge the qi of Shaoyang triple Jiao, and transport the spleen qi to remove dampness,

which was consistent with the core pathogenesis of COVID-19.

Abstract submission # 73

Methodological Progress of Sequential Multiple Assignment Randomized Trials and Its Application in Traditional Chinese Medicine

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The syndrome differentiation of traditional Chinese medicine (TCM) has the characteristics of “ineffective prescription” and “ineffective prescription.” It is difficult to use regular randomized controlled trials (RCTs) to evaluate the efficacy of dynamic regulation and treatment. The sequential multiple assignment randomized trial (SMART) is an emerging adaptive study design in which randomized groups are performed at multiple stages and subsequent interventions are adjusted based on treatment response. It can be used to evaluate the efficacy of dynamic treatment schemes, while retaining the low risk of bias of traditional RCTs, and has a good application prospect in the field of TCM clinical research. This paper summarizes the recent progress of SMART design methodology, including different sample size estimation methods and statistical analysis methods applied to main effect targets, embedded adaptive intervention targets and optimization targets, and provides corresponding operable software. At the same time, some considerations are put forward for the key issues that should be paid attention to when applying SMART design to TCM research, such as the selection of disease types, intervention measures, decision points and tailoring variables, sample size calculation, statistical method development, the importance of pilot trials, ethical considerations and limitations, etc., in order to promote the exploration and practice of this method in the field of TCM. Support the output of high-quality evidence-based studies of TCM.

Abstract submission # 24

Methodological Quality of Systematic Reviews on Chinese Herbal Medicine Published in Chinese Language between 2021-2022: A Cross-sectional Study

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Objective: Rigorous systematic reviews (SRs) on Chinese herbal medicine (CHM) are invaluable in informing clinical decisions and advancing evidence-based practices in Chinese Medicine. CHM SRs published in Chinese are widely read but their methodological quality remains uncertain. This cross-sectional study evaluated the methodological quality of Chinese language CHM SRs published between 2021 to 2022.

Methods: Chinese language CHM SRs were identified through literature searches across three international and four Chinese databases. Eligible SRs should include at least one meta-analysis pertaining to the treatment effect of any orally administered CHM mentioned in the *Chinese Pharmacopoeia* 2020. Methodological quality was appraised using AMSTAR 2. Logistic regressions were conducted to explore the associations between the bibliographical characteristics and quality.

Results: The overall quality of the 213 sampled SRs (including 4248 RCTs and 369,049 patients), 69.5% were critically low, and 30.5% were low quality. None achieved high or moderate quality. None

provided a list of excluded studies with justification or disclosed funding sources of the included trials. Only 0.9% considered the potential impact of risk of bias from trials on SRs' conclusion. Logistic regressions revealed that SRs led by corresponding authors affiliated with universities or academic institutions had lower overall quality compared to those led by corresponding authors affiliated with hospitals or clinical settings. (adjusted odds ratio: 0.333, 95% confidence interval [0.150, 0.738], $P = 0.007$). These authors were also less likely to perform study selection in duplicate or report conflict of interest clearly.

Conclusion: Methodological quality of recent Chinese language CHM SRs is disappointing. These SRs are unlikely to be useful for supporting clinical practice guideline development. To make SRs relevant for Chinese medicine development, there is an urgent need in enhancing SR methodology training for researchers, peer-reviewers and editors, and in adopting of PRISMA reporting guidelines among Chinese language journals as a publication requirement.

Abstract submission # 115

Microhelenin C as a Novel LIF-targeting Agent Inhibits STAT3 Signaling Pathway and Remodels Tumor Microenvironment in Hepatocellular Carcinoma

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Hepatocellular carcinoma (HCC) is a widely prevalent malignant tumor, presenting significant challenges in its treatment. Microhelenin C (MC), a natural product, has been sporadically reported to possess antitumor properties. However, the role of MC in HCC therapy and its specific antitumor mechanisms remain unclear. To address this gap, our study demonstrates that MC effectively inhibits HCC proliferation, inducing cell cycle arrest and apoptosis both in vitro and in vivo. Mechanistically, we observed an abnormal elevation of the oncogenic factor LIF interleukin 6 family cytokine (LIF) in HCC tissues. Significantly, MC downregulated LIF in HCC cells, and subsequent overexpression of LIF restored the anti-HCC effects of MC through the STAT3 signaling pathway. Furthermore, MC exhibited the ability to repolarize tumor-associated macrophages by acting on LIF, leading to the inhibition of HCC growth. Simultaneously, MC impacted various immune cell populations in the tumor microenvironment, including myeloid-derived suppressor cells, dendritic cells, and T cells. In summary, our findings highlight the potential therapeutic use of MC against HCC. By elucidating its inhibitory effects on proliferation, impact on the LIF-STAT3 pathway, and modulation of the immune microenvironment, this study provides valuable insights. These results underscore the consideration of MC as a promising candidate drug for future HCC therapeutics.

Abstract submission # 36

Mindfulness Meditation Combined with Digital Health for Korean Medicine Personnel: A Case Series

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The medical personnel are one of the professions that faces the most stressful environments and threatens the integrity of its mental health. The usefulness of mind-body therapies, including mindfulness training, in alleviating stress has been reported. This case series is the first to report the mental health effects of using a mindfulness training program and an assistive smartphone application for medical personnel working at a Korean medicine (KM) hospital in South

Korea. An online mindfulness program was conducted every other week for 2 months for a total of 5 sessions, each session lasting 2 hours. This program originates from mindfulness-based stress reduction, but also includes compassion and loving-kindness sessions in equal proportions with those of mindfulness training. Also, the smartphone application that promotes the daily routine of meditation was introduced. Four KM doctors and three nurses participated in the program. The important outcomes in this case series were emotional labor, work-related burnout, and Hwa-Byung symptoms. After participating in the program, the levels of surface acting (from 3.05 to 2.81) decreased, but deep acting (from 3.00 to 3.57) increased. Also, in KM doctors, work-related burnout (from 2.63 to 2.21) and Hwa-Byung symptom were decreased (from 21.29 to 17.86). The participants answered the question 'How helpful was this mindfulness program and smartphone application in your participation in the program?' with a 10-point numerical rating scale, showing high scores of 8.25 to 9 points. This study suggests that this mindfulness program with assistive smartphone application may help improve mental health and job-related burnout among medical personnel, especially KM doctors, working at KM hospitals. We plan to further expand and replicate these findings.

Abstract submission # 198

Modulation of Colonic Function in Irritable Bowel Syndrome Rats by Electroacupuncture at ST25 and the Neurobiological Links between ST25 and the Colon

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Irritable bowel syndrome (IBS) is a chronic functional gastrointestinal disease characterized by abdominal pain and defecation disorders. Acupuncture therapy positively affects IBS, with ST25 being the main point. However, ST25 has mostly been used in conjunction with other acupoints. This study aimed to observe the therapeutic effect of electroacupuncture at ST25 alone in IBS and the neurobiological mechanism of ST25 associated with the colon. First, we observed the effect of electroacupuncture at ST25 on the visceral pain threshold and slow-wave discharge of the colon in IBS model rats. Second, we explored the neurobiological mechanism of ST25 associated with the colon using a neural tracer technique. The results showed that (1) electroacupuncture at ST25 alone can alleviate visceral hypersensitivity and restore normal slow-wave frequency and rhythm of the colon in IBS rats; (2) there is a close neuroanatomical connection between ST25 and the colon, i.e., in the dorsal root ganglion (DRG), ST25 is similar in innervation to the colon, mainly in the T8–L1 segment, while the presence of double-labeled positive neurons is present in a part of the DRG; retrogradely labeled motor neurons associated with ST25 were observed in the anterior horn of the spinal cord, and retrogradely labeled sympathetic postganglionic neurons associated with ST25 were observed in the sympathetic nerve chain. These findings suggested that the DRGs and the dorsal horn of the spinal cord are important targets for electroacupuncture at ST25 to reduce visceral hypersensitivity in IBS rats. The sympathetic ganglia may be an important site for ST25 to regulate intestinal motility. The neurobiological mechanism of ST25 action in IBS rats should be further investigated in the future by combining related techniques, such as pseudorabies virus, optogenetics, calcium imaging, and electrophysiology.

Abstract submission # 169

Modulations of Static Functional Connectivity on Insular by Electroacupuncture in Subjective Tinnitus

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Objective: To explore the modulations of electroacupuncture in subjective tinnitus (ST) by comparing the difference of functional connectivity (FC) in ST patients and healthy volunteers between the insular (INS) and the whole brain region.

Methods: A total of 34 ST patients were selected into electroacupuncture group (EG) and 34 age- and sex-matched normal subjects were recruited into control group (CG). The EG received acupuncture at SI19, GB11, TE17, GV20, GV15, GV14, and SJ13. The severity of tinnitus was evaluated by tinnitus handicap inventory (THI), the hearing status was recorded using pure tone audiometry, and resting-state functional magnetic resonance imaging (rs-fMRI) was performed on the brain before and after treatment. On the contrary, the CG received no intervention, yet only rs-fMRI data were collected.

Results: With the electroacupuncture treatment, the total THI score, average air conduction threshold of patients of EG were significantly lower than before ($P < 0.01$). Compared with CG, FC of ST patients between INS and left superior temporal gyrus and right hippocampal significantly decreased before treatment, while FC of ST patients between INS and right superior frontal gyrus, left middle frontal gyrus and right anterior cuneus significantly decreased after treatment. FC of ST patients between the INS and right middle frontal gyrus, left superior frontal gyrus and right paracentral lobule showed a significant decrease after treatment. In addition, THI score in EG was negatively correlated with the reduction of FC value in INS-left superior frontal gyrus before treatment ($r = -0.41$, $P = 0.017$). Therefore, this study suggests that abnormal FC of INS may be one of the significant central mechanisms of ST patients and can be modulated by electroacupuncture.

Discussion: Electroacupuncture treatment can effectively reduce or eliminate tinnitus symptoms in ST patients and improve the hearing by decreasing FC between the INS and the frontal and temporal brain regions.

Abstract submission # 283

Moxa-smoke Improves the Olfactory Function and Cognitive Ability in APP/PS1 Mice by Regulated GSK-3 β /CREB Pathway

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Olfactory impairment occurs in the early stage of Alzheimer's disease (AD), but ways to improve the sense of smell while delaying AD remain to be discovered. Moxa combustion products (MCP) as a part of moxibustion, could reduce the β -amyloid and improve learning memory abilities, however, whether it improves AD through the olfactory pathway is not clear. Here, 4-month-old APP/PS1 male mice were treated by MCP for 12 weeks and rosemary essential oil served as the positive control. The buried food pellet experiment, the open field experiment, and Morris water maze experiment were used to exam the spatial learning and memory and olfactory function of mice, while the pathological tissue of olfactory bulb and hippocampus were observed by hematoxylin and eosin (HE) staining and transmission

electron microscopy, then the protein expression of GSK-3 β , CREB and c-fos were tested by Western blot (WB). Results showed that the MCP group performed better than the model group in behavior test, MCP intervention improved the learning and memory ability, decline and anxiety like emotions, and olfactory function of APP/PS1 model mice. HE staining showed that MCP increased the number of olfactory mitral cells and hippocampal CA1 neurons, and could regulate synaptic plasticity. WB showed that the expression of GSK-3 β protein of the MCP group was significantly decreased, while the expression of CREB and c-fos protein was significantly increased in olfactory bulb and hippocampus. Therefore, we conclude that MCP improves spatial learning memory and olfactory function, reduces the depression-anxiety-like behavior in APP/PS1 model mice, protects nerve cells and improves damage of synaptic structures. The effects of MCP were superior to those of rosemary essential oil. After blocking the olfactory pathway, the effects of MCP were diminished, suggesting that MCP may act through the olfactory pathway. The molecular pathway of action of MCP may be through the GSK-3 β /CREB signaling pathway.

Abstract submission # 263

Moxibustion Treatment Increases the Survival Rate of Lung Infection of Patients Bed-ridden Due to Osteoporotic Fracture of the Spine via Regulation of the Inflammatory Responses

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Objective: This study aimed to investigate the potential role of moxibustion (MOX) in the treatment of lung infection in bed-ridden patients due to osteoporotic fracture of the spine.

Methods: Ninety-six senile patients with pulmonary infection who were bed-ridden due to osteoporotic fracture of the spine were grouped into a MOX (–) group and a MOX (+) group. An animal model was established as a SHAM group, a PRIMED group, a MOX 15' group and a MOX 30' group.

Results: For the patients' study, we found that the survival rate was higher for patients who received MOX. Moreover, tumor necrosis factor- α , interleukin (IL)-1 β , IL-6 and IL-18 were downregulated while IL-10 was upregulated by MOX. MOX time-dependently increased the survival while reducing the bacteria left in infected mice.

Conclusion: Moxibustion significantly alleviated the inflammatory responses, thus leading to a better survival rate of patient's bed-ridden due to osteoporotic fracture of the spine.

Abstract submission # 7

Needling Point Location Used in Sham Acupuncture for Knee Osteoarthritis: A Systematic Review and Network Meta-Analysis

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Objective: In sham acupuncture-controlled clinical trials assessing

the efficacy of acupuncture, although sham acupuncture techniques are different from those of verum acupuncture, the same acupuncture points are often used for sham and verum acupuncture, raising the question of whether sham acupuncture is an appropriate placebo. We aimed to examine the effects of sham and verum acupuncture according to the points needed (same or different between sham and verum acupuncture) in knee osteoarthritis.

Methods: Ten databases were searched to identify randomized controlled trials (RCTs) comparing the effects of acupuncture with those of sham acupuncture or waiting lists on knee osteoarthritis. Sham acupuncture was classified as using the same acupuncture points as those in verum acupuncture (SATV) or sham points (SATS). A frequentist network meta-analysis (NMA) was conducted. The certainty of evidence for NMA findings was assessed.

Results: Ten RCTs involving 1628 participants were included. Verum acupuncture was significantly superior to SATS (standardized mean difference [SMD] -0.41 , 95% confidence interval (CI) -0.74 to -0.08) but not different from SATV (SMD 0 , 95% CI -0.54 to 0.54) in terms of pain reduction. Additionally, SATV was significantly superior to the waiting list (SMD -0.67 , 95% CI -1.31 to -0.04). The certainty of evidence was moderate to low.

Conclusion: For patients with knee osteoarthritis, the pain reduction effect of sham acupuncture may be different depending on the points needed, and the control group should be established according to the specific aim of the design and treatment mechanism.

Abstract submission # 90

Neuroimaging Assessment of the Therapeutic Mechanism of Acupuncture and Bee Venom Acupuncture in Patients with Idiopathic Parkinson's Disease: A Double-blind Randomized Controlled Trial

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Objective: The purpose of this study was to explore the therapeutic mechanism of acupuncture and bee venom acupuncture (BVA) in patients with idiopathic Parkinson's disease (IPD) using positron emission tomography (PET) and arterial spin labeling (ASL).

Methods: Patients with IPD who received a stable dose of anti-parkinsonian medication for at least 4 weeks were recruited and randomly divided into one of two groups: treatment and control. The treatment group (11 subjects) received acupuncture and BVA at acupoints, and the control group (9 subjects) received sham acupuncture and normal saline injections at non-acupoints, twice per week for 12 weeks. The patients were examined using PET and ASL at baseline and after the 12-week treatment. In addition, age- and sex-matched healthy subjects without neurological symptoms and history were recruited to compare ASL data of patients with IPD.

Results: PET results revealed that striatal dopamine transporter binding increased in each group after 12 weeks. Although the change was larger in the treatment group, the difference was not statistically significant. In ASL results, the treatment group exhibited hyperperfusion in specific regions compared with the healthy control group. After 12 weeks' intervention, hyperperfusion regions were recovered only in the treatment group. In contrast, significant changes were not found in hyperperfusion regions in the control group after 12 weeks.

Conclusion: Our findings suggest that the therapeutic mechanisms of acupuncture and BVA in IPD are different from placebo and operate by altering dopamine availability and recovering hyperactivity in cerebral blood flow.

Abstract submission # 261

Nieji Improves Behavioral Deficits in Autistic Rats by Modulating CB2R and FAAH in the Central

Endocannabinoid System

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Autism is a neurodevelopmental disorder with core symptoms of social impairment, stereotypical behaviors and lack of interest. Unfortunately, medications that target the core symptoms of autism are not yet available. In addition, there are potential risks associated with the use of medications, such as side effects, and complementary and alternative medicine is receiving increased attention. Originating in ancient China, Nieji has evolved to become one of the complementary and alternative therapies for pediatric disorders in China. It is based on the pinching method and acts on the skin of the spine, pinching the skin from the caudal vertebral root of the spine all the way up to the Dazhui acupoint (DU14). In recent years, abnormalities in the endogenous cannabinoid system have been identified in animal models of autism. Activation of the endogenous cannabinoid system is mainly regulated by the action of arachidonic acid ethanolamine (AEA) on the cannabinoid receptors CB1R/CB2R, with mediating the biological effects of the cannabinoids, and fatty acid amide hydrolase. The endogenous cannabinoid system is involved in the regulation of synaptic plasticity, which affects the body's mood and learning and memory abilities. Our team conducted the first study on the effects of Nieji care on the endocannabinoid system in valproate-induced autism model rats. Nieji therapy for 30 d in autism model rats revealed that Nieji therapy led to an increase in the expression of hippocampal endocannabinoid receptor CB2R protein, and endocannabinoid degrading enzyme (FAAH) in autistic rats. This suggests that Nieji therapy may ameliorate behavioral deficits in autistic rats by modulating important proteins in the central endocannabinoid system.

Abstract submission # 217

Observation on the Efficacy of Transcutaneous Auricular Vagus Nerve Stimulation in Treating Disorders of Consciousness Based on EEG

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Background: With the development of critical technology, more and more critically ill patients are treated. Some critically ill patients are difficult to wake up from the coma because of severe brain injury, which lasts for more than 28 d to enter disorders of consciousness (DOC). Many studies have proved that transcutaneous auricular vagus nerve stimulation (taVNS) plays an important role in improving the level of consciousness in DOC, but its potential neurophysiological mechanism is not clear.

Objective: Verify the clinical efficacy of taVNS in the treatment of DOC, and analyze the changes of electroencephalographic (EEG) power spectrum of DOC caused by taVNS, so as to better explain the potential neurophysiological mechanism.

Methods: A total of 45 patients with DOC were recruited in this study, and all patients received 10 consecutive taVNS treatments. According to whether the Revised Coma Recovery Scale (CRS-R) score increased after treatment, the patients were divided into response group and non-response group. By comparing the differences of EEG power spectrum between different frequency bands and resting state after taVNS intervention, and the relationship between power spectrum difference and CRS-R score, the potential neurophysiological mechanism of taVNS in the treatment of DOC

was further explored.

Results: Adverse effects were observed in all patients, and there was no decrease in CRS-R scores. After the end of treatment, a total of 17 patients with DOC had an increase in CRS-R scores. After treatment, total CRS-R score, the power spectrum changes in delta and theta bands before and after treatment had significant interaction with the groups (responding group and non-responding group), simple effect analysis found that the group with response was significantly less than that after treatment, and the group without response was significantly more than that after treatment.

Conclusion: taVNS can improve the consciousness level of some patients with DOC, and the increase of brain power spectrum in different frequency bands may be related to the improvement of consciousness level after taVNS treatment.

Abstract submission # 208

Olfactory Mechanism of Modulation of PI3K/AKT/GSK-3 β Signaling Pathway by Moxa Combustion Products Intervening with Cognitive Dysfunction in APP/PS1 Mice

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Alzheimer's disease (AD) refers to a neurodegenerative disease primarily associated with cognitive impairment. Previous studies have shown that moxa combustion products (MCP) can improve cognitive function in AD by modulating neurotransmitters in the olfactory bulb (OB) and hippocampus (HP). The influence was attenuated after blocking the olfactory pathway, tentatively revealing that the efficacy of MCP might be closely related to the olfactory pathway. In the current study, we investigated the effects of MCP on learning memory and olfactory function in AD model mice, detected A β deposition, Tau protein phosphorylation, and morphological and structural changes of neurons and synapses in the olfactory pathway-related brain regions (olfactory bulb, piriform cortex and hippocampus), verified the olfactory pattern and PI3K/AKT/GSK-3 β signaling pathway mechanism of MCP to alleviate cognitive dysfunction in AD. The 4-month-old male APP/PS1 mice received an exposure of 10–15 mg/m³ of moxa smoke once a day for 20 min, 6 d a week over 12 weeks. Following the intervention, the Morris water maze (MWM) test and the buried food pellet test (BFPT) were successively undertaken. The OMP-positive cells in the olfactory epithelium (OE), A β and phosphorylated Tau (p-Tau) protein expression in the OB, piriform cortex (PC) and HP were examined. The neuronal morphology, dendritic spine density and synaptic ultrastructural changes in the olfactory pathway were visualized. The expression of molecules related to the PI3K/Akt/GSK-3 β signaling pathway was quantified. The results demonstrated that MCP ameliorated learning and memory deficits, downregulated A β deposition and p-Tau protein expression, and restored neuronal morphology, dendritic spine density and synaptic ultrastructural changes in the OB, PC and HP of APP/PS1 mice. The study highlighted that MCP was one of the effective factors in moxibustion therapy, which notably improved cognitive function of APP/PS1 mice through the olfactory pathway and modulating the PI3K/AKT/GSK-3 β signaling pathway.

Abstract submission # 112

Optimal Dose of Acupuncture for Patients with Chronic Pain: Protocol of a Prospective Cohort Study

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Objective: Real-world data evaluating the optimal acupuncture dose for patients with chronic pain are limited, despite they play important

roles in the effect of acupuncture. To access the dose-effect of acupuncture and explore the optimal acupuncture frequency and sessions.

Methods: A prospective, longitudinal cohort will be conducted. Two thousand consecutive patients with musculoskeletal pain of neck, low back, and knee for more than 3 months will be recruited at 13 tertiary hospitals. The study will include both short-term (4 weeks) and long-term (52 weeks) outcomes. In the short-term period, patients will be divided into three groups: high-exposure group (≥ 8 sessions in the first 4 weeks), low-exposure group (3-7 sessions in first 4 weeks), and non-exposure group (≤ 2 sessions in the first 4 weeks). The primary outcome will be the change from baseline of Numeric Rating Scale (NRS) score at week 4. The secondary outcomes will include the proportion of participants who achieved a clinically important reduction of at least 30% on NRS, function, global patient assessment, depression, anxiety, sleep, quality of life, medication usage, and adverse events will be also recorded. In the long-term period, the primary outcomes will be recovery determined from three dimensions-pain, disability, and work status at 52 weeks. The secondary outcomes will involve pain operation rate, hospitalization rate, and revisits rate.

Discussion: The findings of this study might provide informative data for the optimal acupuncture frequency and sessions in patients with chronic pain. This study relies on real-world data that is more reflective of prescribing patterns of chronic pain and routine clinical practice in China. Additionally, creating a clinical research database for acupuncture treatment of chronic pain and registering big data would be beneficial.

Abstract submission # 202

Optimized Electroacupuncture Treatment for Female Stress Urinary Incontinence: Study Protocol for a Multi-center Randomized Controlled Trial

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Objective: Stress urinary incontinence (SUI) is a common condition that can severely affect women's life quality. Electroacupuncture (EA) has been proved to be an optional treatment for SUI, but the tolerance of EA becomes a factor affecting efficiency, which should not be ignored and needs to be solved urgently. The purpose of this study is to find out whether the use of alternating acupoints combination can solve this problem or not and provide an optimization of EA treatment for female SUI.

Methods: This multi-center randomized controlled trial will enroll 360 patients with SUI. They will be randomly assigned to one of the three groups—sacral acupoints group (sacral group), abdominal acupoints group (abdominal group), or alternating acupoints group (alternating group)—at a 1:1:1 ratio. The patients will receive 18 sessions of EA treatment and will be followed up for 48 weeks after the treatment. The primary outcome measure of the study is the change of urine leakage at week 6. The secondary outcomes include the incontinence episode frequency (IEF), International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF), severity of SUI, patient self-evaluation of therapeutic effects, weekly usage of urine pads, ultrasonography of pelvic floor, specialty therapies for SUI, evaluation of discomfort during EA treatment, patient acceptability evaluation and adverse events related to the intervention.

Discussion: This trial is specifically designed to offer an optimized EA treatment for female SUI, aiming to enhance their quality of life.

Abstract submission # 188**Osteosarcopenia Expert Consensus**

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Osteosarcopenia is an emerging geriatric disease in which osteoporosis and sarcopenia are both present in older individuals. In 2009, Binkley et al. proposed the concept of osteosarcopenia based on the similar pathological and physiological basis and close correlation between sarcopenia and osteoporosis. It mainly refers to patients who meet the diagnostic criteria for osteoporosis and also have decreased muscle mass/function. Due to the direct causal relationship between sarcopenia and osteoporosis, a decrease in muscle mass will lead to bone mass loss, resulting in the occurrence of osteoporosis. Decreased bone strength and decreased exercise function also lead to muscle atrophy. After investigating the skeletal muscle health of 288 elderly people, researchers found that sarcopenic patients have nearly 4 times higher risk of developing osteoporosis simultaneously, compared to non-sarcopenic patients. A survey of the elderly population (> 80 years old) in Chinese Mainland shows that 10.4% of men and 15.1% of women have brittle fractures that are significantly related with sarcopenia-osteoporosis. The diagnosis of osteosarcopenia is: (1) The T-value of bone density in any part of the lumbar spine or femur is ≤ -2.5 or there has been a brittle fracture; (2) Skeletal muscle mass reduction: males $< 7.0 \text{ kg/m}^2$, females $< 5.4 \text{ kg/m}^2$; (3) Decreased skeletal muscle strength: male grip strength $< 28 \text{ kg}$, female grip strength $< 18 \text{ kg}$ (4) Muscle function decline: 6m walking speed experiment $\leq 1 \text{ m/s}$ or Short Physical Performance Battery score ≤ 9 points. Prevention and treatment of osteosarcopenia: (1) exercise therapy (2) nutritional support, (3) traditional Chinese medicated dietetic therapy will be individualized formulated, based on syndrome differentiation and food medical nature. Traditional Chinese medicine treatment of osteosarcopenia will be differentiated based on syndrome type and formulated individually, (1) liver kidney yin deficiency syndrome, (2) spleen and kidney yang deficiency syndrome and (3) kidney deficiency and blood stasis syndrome.

Abstract submission # 98**Overall Reporting Quality of Randomized Controlled Trials of Acupuncture for Knee Osteoarthritis**

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Objective: To evaluate the reporting quality of acupuncture randomized controlled trials (RCTs) for knee osteoarthritis (KOA), and to explore related factors.

Methods: Four English and four Chinese databases from inception to November 2023 were searched. Using the CONSORT, the STRICTA and the CONSORT-Outcomes 2022 Extension (CONSORT-Outcomes) to evaluate the reporting quality. Regression analyses were conducted on pre-specified study characteristics searching for factors associated with reporting quality.

Results: A total of 168 RCTs were all evaluated by 69 items from 3 reporting quality checklists. For the CONSORT, 16 of 37 items (i.e., 1a, 3a, 3b, 6b, 7a, 7b, 9, 10, 11a, 11b, 12b, 14b, 17b, 18, 21, 24) were under-reported (reported in less than 20% of RCTs), and the weakest reported item was why the trial ended or was stopped (0%). Based on the STRICTA, 4 of 17 items (i.e., 2a, 4b, 5, 6a) were under-reported, and the weakest reported item was number of needle insertions per subject per session (9.5%). For the CONSORT-Outcomes, 8 of 15 items (i.e., 6a.7, 6a.9, 6a.10, 7a.1, 12a.1, 12a.3, 12a.4, 18.1) were under reported. The weakest reported item was identifying any outcomes that were not prespecified in a trial registry or trial protocol (0.6%). Regression analyses were conducted on the

total scores of the 3 checklists, as well as the score of each scale. The results all indicated that published in English and funding represented significant predictors of a high overall reporting quality. Moreover, publication published after 2010 showed better reporting quality for the CONSORT.

Conclusion: The overall report quality of acupuncture treatment for KOA has improved, but some items are weak reported with the deficiencies in reporting quality. To improve the reporting quality, journals, especially Chinese journals, should encourage strict adherence to the reporting guidelines.

Abstract submission # 52**Parent-administered Pediatric Tuina for Improving Sleep Quality and Appetite in School-aged Children with ADHD: Study Protocol of a Pilot Randomized Controlled Trial**Cara Chen¹, To-Ming Wu¹, Juan Yu², Oi-Kwan Chung¹, Lok-Yi Pang¹, Xuan Zhang³, Wing Fai Yeung¹*1. The Hong Kong Polytechnic University, China**2. Affiliated Hospital of Shandong University of Traditional Chinese Medicine, China**3. Shandong University of Traditional Chinese Medicine, China*

Background: Our previous studies suggested that parent-administered pediatric Tuina significantly improved the child's sleep quality and appetite in children with attention deficit hyperactivity disorder (ADHD) within a short period after receiving the intervention.

Objective: To assess the preliminary effects, feasibility, and safety of parent-administered pediatric Tuina for improving sleep quality and appetite in school-aged children with ADHD.

Methods: This project is a three-arm, parallel, open-label, pilot randomized clinical trial. Sixty participants will be randomized into three groups at a 1:1:1 ratio. Parents in the parent-administered Tuina group ($n = 20$) will attend a face-to-face training program on pediatric Tuina for ADHD and conduct this intervention on their children at home. Parents in the parent-child interaction group ($n = 20$) will attend face-to-face training about parent-child interactive exercises and carry them out with their children at home. Both interventions will be carried out every other day during a two-month intervention period, with each manipulation for at least 25-30 min. Participants in the waitlist group ($n = 20$) will not receive both interventions during the intervention period. Outcomes will be assessed at baseline, week 4, and week 8. The primary outcome measure was the Sleep Disturbance Scale for Children; the secondary outcomes included the Children's Eating Behaviour Questionnaire, Conners Parent Rating Scale, and Child Health Questionnaire.

Data analysis: Descriptive statistics for sociodemographic variables and clinical variables will be presented. Data will be presented as mean and standard deviation. The feasibility outcomes will be presented as percentages. The rating scale scores between the intervention groups and the control group at week 4 and week 8 will be compared using a linear mixed-effects model.

Trial registration: ClinicalTrials.gov identifier No. NCT06007742

Abstract submission # 23**Patient Satisfaction on Traditional Chinese Medicine Telemedicine Service During the COVID-19 Pandemic: A Cross-Sectional Study**Shanshan Xu¹, Fai Fai Ho², Talos Ming Hong Kwong³, Angus Siu-cheong Li³, Eun Hae Ha³, Heyu Hua³, Ching Liong³, Kwan Chi Leung³, Betty Huan Wang³, Ting Hung Leung³, Zhixiu Lin³, Samuel Yeung-Shan Wong³, Faming Pan⁴*1. Anhui University of Chinese Medicine, China**2. School of Chinese Medicine, Faculty of Medicine, The Chinese University of Hong Kong, China**3. The Chinese University of Hong Kong, China*

4. Anhui Medical University, China

Objective: Telemedicine appeared as a promising model for traditional Chinese medicine (TCM) services during the COVID-19 pandemic, for both COVID-19 and non-COVID patients. This study aimed to evaluate both types of patients' satisfaction with TCM telemedicine during the pandemic in Hong Kong.

Methods: A cross-sectional study of 122 COVID-19 patients and 90 non-COVID patients who utilized a TCM telemedicine service from March to April 2022 was conducted. Telemedicine Satisfaction Questionnaire, consisting factors of Information Exchange and Patient Comfort, was administered via an online survey after video consultations. Patients' satisfaction on these aspects of satisfaction was assessed. Subgroup and linear regression analyses were conducted to explore patient characteristics associated with satisfaction with telemedicine.

Results: Overall patient satisfaction on Information Exchange was high (28.05 ± 3.66), but rating on Patient Comfort was only mediocre (20.58 ± 4.02), with a clear preference for face-to-face consultation. Compared to non-COVID patients, the total score for Information Exchange was slightly lower amongst those consulted for COVID-19, as a majority of them are new patients without pre-existing relationship with the clinician. Satisfaction tends to be higher among patients who are younger, female, better-educated, employed, and had complete COVID-19 vaccinations.

Conclusion: Despite being fairly satisfied with the TCM telemedicine service, both COVID-19 and non-COVID patients expressed a preference for face-to-face consultation. While improving clinician-patient interaction during video consultation is expected to improve communication quality, it is expected that demand for face-to-face TCM services will rebound in the post-COVID era.

Abstract submission # 5

PEARL: Pain Elimination through Acupuncture Research and Learning in a Busy Urban Emergency Department

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Objective: Pain is one of the most common conditions presented in the emergency department (ED). Standard ED analgesia strategies include oral, intravenous, intramuscular, or subcutaneous medications, and for intractable pain, opioids are often used during the ED visit and at discharge. Pain in Early Life (PEARL) score examined the use of acupuncture as an analgesia strategy to avoid the use of opioids and improve patient outcomes.

Methods: This is a retrospective cohort analysis in an urban academic ED. Institutional Review Board (IRB) approval was obtained, and guidelines were followed. Included were patients ≥ 18 years old with intractable acute or chronic pain, of any origin, who were offered acupuncture treatment. Excluded were cases that required medical or surgical treatment for their pain. Board-certified acupuncturists of our institution's pain service provided the treatment. Data was analyzed using descriptive statistics.

Results: Between 7/01/21 and 6/30/22, 247 patients were referred for acupuncture by the ED and a total of 158 patients met the inclusion criteria. Thirty percent received acupuncture while in the ED and the remainder were treated in clinic. Of the patients treated with acupuncture; non-opioid analgesia was administered in the ED in 79% of cases, and an opioid was used in 11%. Within 30 d of discharge, only 5% had a repeat ED visit for pain; and 44% had a follow up visit in the acupuncture clinic. At follow-up, 93% were "highly likely" or "likely" to choose acupuncture for pain relief again in the future, and 98.5% were "likely" or "highly likely" to recommend acupuncture to a friend.

Conclusion: Acupuncture is a feasible analgesia strategy and useful alternative to opioids in a busy urban emergency department. Our next steps will define optimal ED indications for this analgesia strategy and examine if ED acupuncture reduces the number of ED prescriptions for opioid medications.

Abstract submission # 181

Polygonum cuspidatum Derived Nanoparticles and Acupuncture Combined to Alleviate Rheumatoid Arthritis via Immunomodulation

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Objective: Rheumatoid arthritis (RA) is a common, chronic, inflammatory and debilitating disease that mainly affects joints, seriously damaging physical function and the quality of life. Reducing inflammatory response is the main treatment goal for RA, but due to the non-specific distribution of anti-inflammatory drugs and increased metabolic burden on the body, many adverse reactions usually occur. Therefore, there is an urgent need to explore new drug delivery systems and other complementary strategies with practical targeting capabilities.

Methods: Extracellular vesicles from medicinal plants have been widely used in drug delivery systems and clinical studies as a new natural nanoscale drug carrier. In this experiment, we combined *Polygonum cuspidatum* derived nanoparticles (PDNPs) with acupuncture to treat complete Freund's adjuvant (CFA) induced RA mice. PDNPs with anti-inflammatory effects were prepared using ultrahigh-speed centrifugation method. PDNPs were injected through the ankle joint and acupuncture was performed at the Zusanli (ST36) acupoint to promote targeted and effective delivery of PDNPs to specific damaged areas, thereby improving treatment effectiveness.

Results: PDNPs were extracted and purified by ultrahigh-speed centrifugation. PDNPs combined with acupuncture could alleviate the foot swelling of mice, reduce cartilage damage and inhibit the development of arthritis, playing a synergistic role. After administration, the fluorescence in the ankle and plantar areas gradually increased, indicating that PDNPs may target inflamed joints. Acupuncture could better promote PDNPs to reach arthritic joints. Further research showed that PDNPs combined with acupuncture restored the balance of macrophages and regulate the production of inflammatory cytokines, which may be an important mechanism in the treatment of RA.

Conclusion: In summary, we successfully developed a combined therapy of PDNPs and acupuncture for targeted RA. This combined treatment with PDNPs and acupuncture provides a perspective therapeutic strategy for RA treatment from the perspective of immunomodulation.

Abstract submission # 258

Prediction of Individual Response to Acupuncture Therapy based on Gut Microbiota and Inflammatory Cytokines Factors

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Objective: To explore the potential biomarkers for postpartum depressive disorder (PPD), and the mechanism of why some responded but some not responded to acupuncture therapy on PPD.

Methods: Healthy controls (HCs) and PPD patients were recruited, and they received 17-item Hamilton depression rating scale (HAMD-17) evaluation and blood and fecal samples collection at baseline. Additionally, all PPD patients were treated with acupuncture treatment for 8 weeks. After completing therapy, the same scale

assessment and sample collection at baseline were performed. Gut microbiota data were analyzed with 16SrRNA method. Nine inflammatory cytokines factors of serum were measured by ELLISA method.

Results: A total of 96 PPD patients and 18 HCs were recruited, of which 46 PPD patients and 18 HCs completed the sample collection. Firstly, we found *Faecalibacterium*, *Phascolarctobacterium*, *Butyricicoccus* and *Lachnospiraceae* reduced and *Enterobacteriaceae* increased in PPD patients, which were almost butyrate-producing bacteria. Secondly, based on gut microbiota before therapy, *Paraprevotella* and *Desulfovibrio* spp. were significantly enriched in acupuncture responders, and these organisms had an area under the curve of 0.76 and 0.66 for predicting responders by receiver operating characteristic analysis method, respectively. Finally, in terms of analysis on mechanism of acupuncture response, interleukin (IL)-6, IL-10, and interferon (IFN)- γ levels statistically decreased ($P=0.006$; $P=0.033$; $P=0.024$), while transforming growth factor- β 1 (TGF- β 1) statistically increased after 8 weeks treatment in responders ($P<0.001$). In non-responders, the levels of IL-5, tumor necrosis factor- α and TGF- β 1 statistically increased ($P=0.018$; $P<0.001$; $P<0.000$), while IFN- γ statistically decreased ($P=0.005$). Additionally, the genera *Megasphaera*, *Haemophilus*, and *Fusobacterium* were more abundant in non-responders, while *Bifidobacterium*, *Sellimonas*, and *Ruminococcus* were more abundant in responders.

Conclusion: A relative change of the composition of gut microbiota were found in PPD patients. Acupuncture therapy could alleviate depressive symptoms of patients with PPD and might through adjusting gut microbiota related to pro-inflammation or anti-inflammation.

Abstract submission # 27

Preparation of a Large Animal Model of Hypertension Suitable for the Study of External Therapeutic Methods in Traditional Chinese Medicine: DOCA and AngII Combination-induced Hypertension Model in Mini-pigs

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Objective: Due to the complexity of hypertension, the selection of animal models and therapies has become a hot spot in hypertension research. Small pigs are highly similar to humans in terms of cardiovascular and genomic aspects. This study aimed to explore a large-animal model of hypertension that is easy to operate with external therapeutic methods of traditional Chinese medicine, the present study used DOCA in combination with AngII to establish a model of hypertension in mini-pigs, and verified the feasibility of the method by measuring the blood pressure in a noninvasive way.

Methods: Healthy 3-month-old male Bama miniature pigs ($n=6$ /group) were selected. After isoflurane inhalation superficial anesthesia of miniature pigs, those in the DOCA + AngII group were administrated with regular intake of high-salt feed, subcutaneous injection of DOCA (150 mg/kg), and intraperitoneal injection of AngII (0.3 mg/kg); and the control group was given regular intake of regular feed. The modeling was performed once every 2 d for 2 weeks. Non-invasive blood pressure measurements were performed on the forelimbs of minipigs before and after modeling using an animal Doppler sphygmomanometer.

Results: Blood pressure in the DOCA + AngII group showed a continuous upward trend starting from the 2nd week of modeling, and in order to verify the validity of modeling, blood pressure measurements were performed at the 4th week after modeling, and it was found that systolic blood pressure continued to be stable at more than 130 mmHg and diastolic blood pressure was more than 80 mmHg, and compared with the control group, the blood pressure was still significantly higher than that of the control group after 4 weeks of modeling ($P<0.001$).

Conclusion: Through validation we found that the modeling method is feasible and enhances the potential of mini-pigs as a model for human hypertension research, contributing to hypertension-related preventive and therapeutic studies with external Chinese medicine therapies.

Abstract submission # 161

Promoting Critical Thinking through Socratic Questioning for Traditional Chinese Medicine Higher Education in Africa: A South African Case Study

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Critical thinking is an essential skill that students need to develop to provide quality support, care and well-being for their patients in traditional Chinese medicine (TCM) practice. It is a crucial skill that includes critical decision-making, evaluating the situation, communicating and participating in the decision-making. These skills are aligned to the 21st Century work skills required for efficient and quality outputs. The Socratic questioning technique is a practical approach to promote and enhance students' critical thinking during their work-integrated learning. This study explored South African students' views and experiences of Socratic questioning to promote their necessary critical thinking skills in their TCM programme at a South African higher education institution. The researcher employed a qualitative case study design embedded within an interpretivist paradigm. The research setting was a public university in Gauteng province, South Africa. The purposive sampling technique was used to invite participants. Five (5) participants voluntarily agreed to participate. The data collection instrument was an interview. Data were analysed inductively, whereby themes were identified and analysed. Trustworthiness and its relevant principles were adhered to throughout the study. The findings of this study revealed that students acknowledged the value of Socratic questioning in TCM education to improve critical thinking in clinical practice. They further agreed that the technique allowed them to be self-reflective. However, participants indicated that academics need to be thoroughly familiar with Socratic questioning to add value to their learning. More time should be allocated for Socratic questioning during work-integrated learning. This study concluded that Socratic questioning was essential to promote students' critical thinking in TCM higher education in South Africa. However, there is a need to train academics and clinical instructors to be knowledgeable on utilising Socratic questioning methods. Further studies should be conducted at international levels with different research approaches.

Abstract submission # 157

Protein-based Functional Hydrogel Containing Zinc Ions and Phalloperin Accelerates Diabetic Wound Healing and Cutaneous Nerve Repair

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Objective: Innervation plays a key role in the wound healing process. However, cutaneous nerve regeneration in diabetic wounds remains a challenge for current clinical treatment. Studies have reported that some metal ions and Chinese herb-derived natural compounds can facilitate nerve regeneration, making it suitable as a treatment to promote wound healing. This study aims to develop a functional hydrogel containing zinc ions and phalloperin (PP), a natural

compound extracted from traditional Chinese medicine *Angelica dahurica*, for accelerating diabetic wound healing and cutaneous nerve regeneration.

Methods: Herein, a natural protein-based functional hydrogel is developed using keratin as the sole matrix, and protocatechuic aldehyde (PA) and zinc ions as the building blocks through dual-dynamic crosslinking reactions of thiol-aldehyde addition and catechol-zinc ions coordination. F127/F68 mixed micelles are used to encapsulate PP into the hydrogel for an improved water solubility. We investigated the injectability, adhesion, shear-thinning property, antibacterial activity and drug release behaviour of the hydrogel. Cell counting kit 8 (CCK8), Live/Dead assay and hemocompatibility test were performed to evaluate the biocompatibility of the hydrogel in vitro. A full-thickness wounds in diabetic mice and histopathology assays were used to evaluate the wound healing capacity of the hydrogel.

Results: The unique structural design endows the hydrogel with excellent injectability, skin adhesion, self-healing and antibacterial ability, and biocompatibility. In addition, the hydrogel acts as a drug carrier for the loading and sustained release of PP. Our findings demonstrate that the PP-loaded hydrogel promoted cutaneous nerve regeneration, angiogenesis and tissue remodelling in both DB. DB and streptozotocin-induced C57BL/6 diabetic mice, notably by the synergistic effect of zinc ions and PP.

Conclusion: The protein-based functional hydrogel containing zinc ions and PP has excellent nerve regeneration ability, showing a great potential in diabetic wound therapy.

Abstract submission # 222

Randomized Controlled Clinical Trials for Acupuncture Treatment of Abdominal Obesity

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Objective: To observe the therapeutic effect of acupuncture intervention in reducing visceral fat content and secretory function in abdominal obesity patients.

Methods: A total of 73 cases of abdominal obesity patients were randomly divided into acupuncture group ($n = 50$) and control group ($n = 23$) according to the randomized block design. For patients of the acupuncture group, Zhongwan (CV12), Tianshu (ST25), Daheng (SP15), Daimai (GB26), Shuidao (ST28), Waiguan (SJ5) and Zulinqi (GB41) were punctured with filiform needles, followed by electroacupuncture stimulation (2 Hz/100 Hz, 4–8 mA) of bilateral ST25 and GB26 for 20 min, once every other day for 8 weeks. In addition, the patients were also given with health education in every session of treatment. The patients of the control group were asked to receive health education including restraining wine or liquor and salt intake, stopping smoking, increasing physical activities, regular daily life habit, etc. The abdominal fat thickness was detected using a color Doppler ultrasonography, and serum visfatin level was assayed using enzyme-linked immunosorbent assay. Additionally, the body weight, body mass index (BMI), waist circumference (WC), and hip circumference (HC) were determined.

Results: After the treatment, the subcutaneous fat thickness levels including the subcutaneous fat at the mid-point between the xyphoid and the umbilicus (S2) and the right side of the umbilicus (S1), and serum visfatin content, WC and HC in both control and acupuncture groups, visceral fat at the mid-point between the xyphoid and the umbilicus (V1) and at the right side of the umbilicus (V2), and antero-hepatic fat, perirenal fat, and body weight and BMI in the acupuncture group were significantly reduced in comparison with pre-treatment ($P < 0.05$, $P < 0.001$).

Conclusion: Acupuncture therapy can effectively reduce the visceral fat content compared to standard health education. Both acupuncture

treatment and health education can decrease serum visfatin level, regulating visceral fat's secretion.

Abstract submission # 84

Registry Databases, Their Potential Uses, and the Threat of Artificial Intelligence to Our Profession

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Modern information technology has for some time provided us with the exciting opportunity to provide online clinical registries (OCR) to qualified Chinese medical practitioners that allow for efficient recording of patient records with high levels of data security. These OCRs also have the capacity to facilitate real-world clinical insights through artificial intelligence (AI) analysis of de-identified patient permitted treatment data (DPPTD). These OCR should utilise a standardised Oriental medical diagnostic format that facilitates acceptable levels of diagnostic reliability. This will ensure that DPPTD analysed will be of the highest quality. The insights that may be obtained from DPPTD conceivably may validate our existing treatment approaches, determine whether constitutional approaches are relevant and when, and/or identify new effective approaches, all potentially improving treatment efficacy. Insights drawn from OCR and DPPTD data will add to our profession's knowledgebase as well as provide guidance to teaching institutions on what is being treated effectively and how in the 'real world'. Practitioners will eventually be taught how to be effective in clinic using pragmatic data-supported knowledge bases, instead of relying on expert opinion level, textbook-supported information. Real risks, however, are on the horizon. It is strongly proposed that use of OCR should be restricted to suitably qualified practitioners and the insights obtained from DPPTD should not be made available to publicly assessable AI. Clinical insights gained from DPPTD should be used as supplemental information to be used by fully trained practitioners to help them make informed decisions, and not be shared online with partially trained or untrained people. Without such steps AI is likely to disrupt our profession, as it has the potential to and will very likely devastate many others. This presentation will discuss the exciting possibilities OCR and DPPTD should open to our profession and the potential risks of AI.

Abstract submission # 215

Regression Fundamentals, Based on the Analysis of Acupuncture Manipulation and Transient Receptor Potential Channels to Explore the Connotation of Acupuncture

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Objective: A large amount of evidence suggests a correlation between transient receptor potentials (TRPs) and acupuncture, yet conflicting results abound. It is worth noting that many studies in relevant fields seriously overlook acupuncture manipulation, which is the basic principle of the therapeutic efficacy of acupuncture. Therefore, we aimed to explore whether acupuncture manipulation has a certain impact on the experimental results, even reverse the results.

Methods: We established a heat empirical syndrome animal model and selected appropriate acupoints to apply reinforcing and reducing manipulation. Evaluation indicators serve as standards for detecting the expression of TRPs. The animals were divided into four groups: normal group (a), heat empirical group (b), heat empirical + acupuncture reinforcing group (c), and heat empirical + acupuncture reducing group (d).

Results: In theory, the therapeutic effect is $a > d > b > c$ ($a > d > c > b$ is plausible), and the expression of TRPV1 is $b > c > d > a$ ($c > b > d > a$ is also plausible). In fact, there seems to be a certain correspondence between TRPV1 and the "heat" in traditional Chinese

medicine. TRPs, as the most basic temperature sensors, are different from other ion channels and may open a new gate for the “functionalization” research of the meridian system. Due to limitations, we still lack sufficient evidence to confirm. We encourage further research to deepen the understanding.

Conclusion: Research should be conducted on the inseparable set of “disease model (combination of disease and syndrome)-acupoint area-physical tonifying and reducing-chemical effect-therapeutic effect (evaluation index).” Regardless of hand acupuncture or electroacupuncture, attention should be paid to the puncture methods of needles and descriptions should be provided, and the selection of acupoints should be targeted based on the disease model, rather than blind obedience. Finally, we expect this hypothesis to be focused on and validated.

Abstract submission # 150

Research Design and Preliminary Results of the Warm Palace Analgesic Point Sticker in the Treatment of Primary Dysmenorrhea

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Dysmenorrhea, a common gynecological condition affecting women worldwide, can be categorized into primary and secondary dysmenorrhea. Secondary dysmenorrhea can often be improved by treating underlying pelvic diseases. For primary dysmenorrhea, oral contraceptives and non-steroidal anti-inflammatory drugs (NSAIDs) are commonly used, but they may cause side effects or have limited efficacy. To address this, a research team developed a Warm Palace Analgesic Point Sticker (WPAPS) based on the traditional Chinese medicine therapy “Heavenly Moxibustion.” A double-blind, randomized, placebo-controlled trial has been conducted to evaluate the effectiveness of WPAPS in relieving primary dysmenorrhea. Due to the nature of primary dysmenorrhea, the study utilized telemedicine experimental methods instead of traditional offline intervention. Participants in the study received either the test WPAPS or a control placebo sticker five d before each menstrual period, once a day for five consecutive d. The intervention consisted of three sessions, with one menstrual cycle being considered as one intervention. The primary outcome of the study was the change in mean pain intensity measured by the Cox Menstrual Symptom Scale (CMSS). Secondary outcomes included measurements from the Numerical Rating Scale (NRS), Beck Anxiety Inventory (BAI), Traditional Chinese Medicine Body Constitution Questionnaire, Traditional Chinese Medicine Syndrome Type Questionnaire, and tongue image assessments. Our preliminary results showed that the telemedicine experimental method was effective in terms of subject recruitment, monitoring, protocol compliance, subject retention and follow-up. No severe adverse effect had been reported, indicating that the WPAPS was safe. We expect the study to provide robust evidence regarding the therapeutic efficacy and safety of WPAPS, as well as explore its potential application in telemedicine healthcare practices in Hong Kong and beyond.

Abstract submission # 265

Research on Multi-scale Traditional Chinese Medicine Constitution Identification Method Based on Computer Vision

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With the development of society and the improvement of living standards, the people pay more attention to life safety and health quality, and there is a growing demand for diverse and personalized

health solutions. To effectively respond to various health challenges and better meet human health needs, there is an urgent need to accelerate the development of traditional Chinese medicine (TCM), which can be achieved with the use of artificial intelligence and digital technology. This study proposed a TCM constitution identification model based on tongue diagnosis, facial features, constitution questionnaire, and birth date characteristics, and explored an objective and standardized method of identifying nine types of TCM constitutions. By establishing an integrated multi-model of multiple deep learning approaches, the bias and variance of a single model are effectively reduced leading to a more reliable prediction result. The system predicts their TCM constitution types and health status to generate multi-dimensional analysis reports and health and wellness programs. These programs include taboos in exercise and diet, as well as individualized care plans including self-acupoint massage, dietary care, self-exercise care, and self-emotional care. Artificial intelligence and digital technology have deeply integrated TCM intelligent services with the medical industry, which not only promotes traditional Chinese medicine culture but also enhances its application in healthcare, contributing to the well-being of individuals.

Abstract submission # 117

Research on the Inhibitory Effect of Direct Moxibustion on the Tumor Growth of Colitis Associated Cancer Rats and Its Mechanism on the E3 Ubiquitin Ligase ITCH and circ-ITCH

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Objective: To investigate the effect mechanism of direct moxibustion on the E3 ubiquitin ligases ITCH and circ-ITCH in rats with colitis-associated cancer (CAC).

Methods: Sprague-Dawley rats were randomly divided into normal group, CAC model group and direct moxibustion group. Bilateral Zusanli (ST36) were used in moxibustion group. The tumor formation rate and hematoxylin and eosin staining were used to evaluate the inhibiting effect of moxibustion on colon tumor growth in CAC rats. The C-myc and proliferating cell nuclear antigen (PCNA) of colon tissue were detected by immunohistochemistry to observe the effect of direct moxibustion on CAC inhibiting tumor growth. The ITCH protein expression in colon of CAC rats was observed by immunohistochemistry, and the expression of ITCH mRNA and circ-ITCH were detected by RT-qPCR. The protein expression of disheveled segment polarity protein 2 (DVL2), Wnt family member 3A (Wnt3a) and β -catenin in colon tissues of each group were detected by Western blot.

Results: Compared with the normal group, the body mass of rats in the model group was decreased, the tumor formation rate was significantly increased ($P < 0.05$), and high-grade adenocarcinoma formation was observed, ITCH protein expression in colon was decreased ($P < 0.05$), ITCH mRNA and circ-ITCH expression were decreased ($P < 0.05$), and C-myc, PCNA, DVL2, Wnt3a, β -catenin protein expression were increased ($P < 0.05$). By contrast, compared with the model group, the body mass of rats in the direct moxibustion group increased and the tumor formation rate decreased ($P < 0.05$). ITCH protein expression was increased ($P < 0.05$), ITCH mRNA and circ-ITCH expression were increased as well ($P < 0.05$), and C-myc, PCNA, DVL2, Wnt3a, β -catenin protein expression were decreased ($P < 0.05$).

Conclusion: Direct moxibustion may inhibit CAC colon tumor growth by up-regulating expression of circ-ITCH and the parent gene ITCH in the colon of CAC rats, promoting DVL2 ubiquitination degradation and inhibiting Wnt/ β -catenin signaling pathway.

Abstract submission # 211

Research on the Mechanism of Acupuncture Treatment for Post-stroke Depression Based on the Microbiota-Gut-Brain Axis Regulation

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Objective: To explore the potential mechanisms of acupuncture for post-stroke depression (PSD), this research focuses on the microbiota-gut-brain axis theory. Specifically, it examines two critical elements: the intestinal microbiota distribution and the expression of tryptophan hydroxylase 1 (TPH1), a precursor of 5-hydroxytryptamine (5-HT) in the central nervous system.

Methods: The PSD rat model was established using the middle cerebral artery occlusion method combined with chronic unpredictable mild stress procedures. Rats were randomly assigned into four groups: a normal control group, a model control group (PSD modeling), an acupuncture group (PSD modeling + acupuncture), and an inhibition control group (PSD modeling + administration of gut microbiota inhibitory medication + acupuncture). Behavioral methods were used to observe depressive-like behaviors in post-stroke rats and neurological deficits. Mixed culture and spread plate methods were used to study the characteristics of rat intestinal microbiota distribution during acupuncture treatment for PSD. reverse transcription-polymerase chain reaction and Wb methods were employed to analyze changes in brain TPH1 levels.

Results: Acupuncture showed significant effectiveness in improving symptoms of PSD in rats. Compared to the model control group and inhibition control group, the acupuncture group showed better performance in the forced swim test, open field test, and sucrose preference test. Compared to the inhibition control group, the model group showed a reduction in immobility time. Furthermore, the acupuncture group exhibited higher neurological function deficit scores, a greater quantity of *Escherichia coli*, and higher levels of TPH1 mRNA and protein compared to the model control and inhibition control groups. The numbers of *Lactobacillus*, *Bifidobacterium*, and fungal colonies in the acupuncture group were higher than in the inhibition control group.

Conclusion: Bidirectional verification experiments revealed a clear correlation between acupuncture treatment and changes in gut microbiota, as well as the regulation of neurotransmitters. Acupuncture treatment significantly improves symptoms in post-stroke depressed rats, and this effect is closely related to the regulation of the microbiota-gut-brain axis.

Abstract submission # 221

Research on the Mechanism of Electroacupuncture at Neiguan (PC6) on Myocardial Ischemia Reperfusion Injury Based on Serum Exosomes miRNAs

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Objective: To analyze the mechanism and potential targets of electroacupuncture (EA) at Neiguan (PC6) for myocardial ischemia reperfusion (I/R) injury based on serum exosome miRNAs.

Methods: A total of 40 male Sprague-Dawley rats were randomly divided into a sham surgery (SO) group ($n = 10$) and a myocardial I/R injury model (I/R) group ($n = 20$). The I/R group used coronary artery

ligation to replicate the model, and after modeling, they were randomly divided into the I/R group ($n = 10$) and EA group ($n = 10$). SO group did not ligate the coronary artery. EA group received 7-day EA treatment at bilateral PC6, while the other groups did not receive treatment. Then the following indicators were assessed including left ventricular ejection fraction (LVEF) and left ventricular fraction shortening (LVFS); the levels of serum lactate dehydrogenase (LDH), creatine kinase MB (CK-MB), and myoglobin (MB); the levels of interleukin-6 (IL-6), tumor necrosis factor- α (TNF- α), and monocyte chemoat trace protein-1 (MCP-1) in myocardial tissue; and pathological morphological damage in myocardial tissue. The RNA sequencing technology was used to detect key serum exosome miRNAs regulated by EA at PC6 and the targets can and miRDB were applied for target gene prediction.

Results: The LVEF and LVFS were significantly increased ($P < 0.01$) in the EA group compared with I/R group. The levels of LDH, CK, CK-MB, and MB were significantly reduced ($P < 0.01$). Meanwhile, the IL-6, TNF- α , and MCP-1 were significantly reduced ($P < 0.05$). The mild myocardial injury was observed with the relatively intact structure and a slight infiltration of inflammatory cells. Four key serum exosomes miRNAs were obtained for electroacupuncture: miR-1843b-5p, miR-186-5p, miR-351-3p, and miR-22-3p. The main signaling pathways involved were mTOR, MAPK, Hippo, and ferroptosis signaling pathways.

Conclusion: EA at PC6 can significantly alleviate myocardial I/R injury, possibly by regulating serum exosomes miRNAs and modulating the mTOR, MAPK, Hippo, and ferroptosis signaling pathways.

Abstract submission # 237

Research Progress of Auricular Point Therapy for Cognitive Impairment

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Cognitive impairment is one of the challenges in the treatment of brain disorders. Although medication is currently the main treatment for cognitive impairment, it lacks accuracy. Auricular point therapy, as a branch of acupuncture, offers a safe and simple alternative. Based on the theory of human biological holography, it achieves the purpose of treating diseases by stimulating the movement of qi and blood in the viscera and meridians of the human body. Previous studies have demonstrated that auricular acupoint therapy is effective in improving cognitive impairment. However, there are gaps in understanding the auricular point treatment of cognitive impairment, such as evidence-based studies on the treatment methods, point selection rules and intervention effects of cognitive dysfunction. This review aimed to analyze the advantages of auricular point therapy in the treatment of cognitive disorders, common diseases, treatment methods, stimulation methods, point selection rules, evaluation tools, efficacy evaluation. It also identifies shortcomings and puts forward targeted suggestions and prospects for future research. It is possible to combine the severity of cognitive impairment with the dialectical type of traditional Chinese medicine syndrome, give personalized intervention, and carry out multi-center, large sample random, multi-blind, controlled trials, focusing on patient-centered holistic care, so that the therapy can be more widely promoted in clinical practice, bring benefits to patients, and continue to provide evidence-based medical evidence for the effectiveness and safety of auricular point therapy in treating this disease. Actively explore effective and safe methods for the treatment of cognitive disorders. Further studies focusing on the mechanism of cognitive disorders are crucial. Meanwhile, further studies on the pathogenesis of auricular treatment for cognitive impairment are necessary, which will help its wider clinical application.

Abstract submission # 32**Research Protocol for Yulinzhu in Treating Women with Diminished Ovarian Reserve: A Double-blind, Randomized, Multi-centre, Placebo-controlled Trial**

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Objective: In April 2022, the Chinese Clinical Diagnosis and Treatment of Diminished Ovarian Reserve Expert Group published an expert consensus on clinical diagnosis and treatment of diminished ovarian reserve (DOR), highlighting that DOR is a result of a decrease in the quantity and/or quality of oocytes in the ovary, which impairs ovarian function and ultimately compromises fertility. Patients are found to have higher basal follicle stimulating hormone (FSH) levels and lower anti-mullerian hormone (AMH) and antral follicle count (AFC) levels. Assisted reproductive technology (ART) is often applied on patients but may encounter problems such as low ovarian response, low number of oocytes retrieved, high cycle cancellation rate, and low embryo transfer success rate. Our team reviewed relevant randomized controlled trials (RCTs) published and we observed that traditional Chinese medicine (TCM) can treat DOR by improving female fertility and increasing the success rate of ART. It also suggested that TCM, no matter used alone or as an adjunctive treatment, can treat and prevent infertility, and delay or treat ovarian premature aging. However, high-quality RCTs are needed to support the above observation. Therefore, this study is designed to investigate the efficacy of TCM for DOR and its potential beneficial effects on fertility.

Methods: This protocol is a double-blind, randomized, multi-centres, placebo-controlled trial carried out to determine the efficacy of Yulinzhu treatment on DOR. Subjects' (1) AMH levels, (2) ovarian function (E₂, LH, FSH), (3) bilateral ovarian AFC as shown in pelvic ultrasound, and (4) Traditional Chinese Medicine Symptom Score (TCMSS) will be recorded. Success rate will also be calculated. Pregnancy rate and live birth rate will also be followed.

Discussion: By applying this protocol, we aim to investigate the efficacy of Yulinzhu for DOR and its potential beneficial effects on fertility. Also, we may raise public awareness on the importance of maintaining ovarian health and the clinical efficacy of TCM treatment for DOR.

Abstract submission # 116**Self-acupressure Intervention for Pain, Fatigue and Sleep Disturbance in Breast Cancer Survivors: Development and Description**

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Objective: Transparent reporting of intervention content and delivery is needed to enhance fidelity and ensure successful implementation of a trial. This paper describes development procedures and characteristics of self-acupressure intervention for pain, fatigue and sleep disturbance in breast cancer survivors.

Methods: The intervention development was guided by the Medical Research Council (MRC) framework with three phases. The first phase was the identification of the evidence base through multiple systematic reviews and individual randomized controlled trials. The second phase involved exploring the relevant traditional Chinese medicine and behaviour change theories to enhance the effectiveness and implementation of the intervention. The third phase included expert consensus on intervention protocol. The Template for

Intervention Description and Replication checklist was adopted as a framework to describe the characteristics of the intervention.

Results: The intervention elements were finalized based on a high level of agreements among experts. The intervention lasted eight weeks and combined two weeks of face-to-face group-based training sessions by a licensed traditional medicine practitioner, followed by six consecutive weeks of home-based self-practice. Daily reminders supported by behavioral techniques were provided to enhance engagement with and compliance to the intervention. Intervention materials included an education booklet and a video about acupoint locations and acupressure methods associated with symptoms. For each acupoint, the pressing intensity is one min per day. The acupoint protocol is standardized for each symptom.

Conclusion: A symptom cluster management program through self-acupressure intervention in breast cancer survivors has been developed and described following an evidence-and theory-based approach and is recommended for pilot testing in a future trial.

Abstract submission # 81**Self-administered Acupressure for Depression: A Preliminary Analysis of Randomized Controlled Trial**

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Objective: To evaluate the clinical effects of self-administered acupressure (SAA) for treating depressive symptoms delivered through a training course.

Design and Subjects: This randomized controlled trial (RCT) compares the effects of SAA training to mental health education (MHE) on subjects with depression at week 4 (immediate) and week 12 (short-term). The RCT aimed to recruit 250 participants and is currently ongoing. The first 75 participants who completed the study have been analyzed.

Interventions: Participants in the SAA group attended two 2-hour training sessions (1 week apart) to learn self-administered acupressure and practiced twice daily for 12 weeks. Participants in the control group received mental health education following the same schedule and duration. The primary outcome measure was the Patient Health Questionnaire (PHQ) for depression at 12 weeks. Other outcomes included the Hamilton Depression Rating Scale (HDRS), Depression Anxiety Stress Scales (DASS-21), Insomnia Severity Index (ISI), and Short-Form (six-dimension) Health Survey (SF-6D) at weeks 4, 8, and 12.

Results: Participants in both groups (37 in the SAA group and 38 in the MHE group) showed a decrease in PHQ-9 scores from baseline to week 12. PHQ-9 scores in the SAA group decreased from 12.9 at baseline to 6.5 at week 12, while the MHE group decreased from 13.7 at baseline to 8.9 at week 12. The difference between groups in change from baseline was -1.56 (95% CI: -0.360, 0.498, effect size = 0.37, $P = 0.14$). Similar trends of improvement were observed in other outcome measures. Preliminary analyses did not reveal any significant differences at this stage.

Conclusion: The two 2-hour training sessions of SAA and MHE are feasible and acceptable to participants. Improvement trends were observed in both the SAA and MHE groups. A complete sample is needed to determine the differences between the two groups.

Abstract submission # 251**Somatosensory Afferent Nerve Fibers in Local Distinct**

Layer Involved in Inflammatory Muscle Pain Reliving by Electroacupuncture and Moxibustion-like Stimulation in Rats

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Previous studies have shown that both superficial and deep acupuncture produced clinically relevant and persisted effect on chronic pain, and somatic primary afferent fibers played critical roles in acupuncture and moxibustion analgesia. However, which kind of afferent fibers in distinct layer of the pain area is activated to relieve pain precisely remains unclear. The purpose of the study was to investigate the roles of distinct peripheral afferents in different layers of the pain area (muscle or skin) for pain relief. Muscular A-fibers activated by deep electroacupuncture (dEA) with lower intensity (approximately 1 mA) persistently alleviated inflammatory muscle pain. Meanwhile, cutaneous C-nociceptors excited by noxious moxibustion-like stimulation (MS) and topical application of capsaicin (CAP) on local pain area produced durable analgesic effect. Additionally, spontaneous activity of C-fibers caused by muscular inflammation was also inhibited by dEA and CAP. Furthermore, decreases in pain behavior induced by dEA disappeared after deep A-fibers were demyelinated by cobra venom, whereas CAP failed to relieve pain following cutaneous denervation. Collectively, these results indicate that both dEA and MS ameliorate inflammatory muscle pain through distinct primary afferents in different layers of somatic tissue. The former is achieved by activating muscular A-fibers, while the latter is mediated by activating cutaneous C-fibers.

Abstract submission # 267

Spinal Analgesic Mechanism of Adiponectin in Electroacupuncture for Inflammatory Pain

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Objective: To determine whether adiponectin (APN) contributes to electroacupuncture (EA)-produced analgesic effects via AdipoR2-mediated AMPK pathway in the spinal cord.

Methods: Male C57BL/6J, APN knockout (KO) and wild-type (WT) mice, aged 8–12 weeks, were used. Inflammatory pain was induced on left hand paw by subcutaneously injection of 0.02 ml complete Freund's adjuvant (CFA). Two EA treatments, in 10 Hz, 2.5 mA and 0.1 ms pulse-width at acupoint GB30 bilaterally, were administrated each for 20 min. Sham EA was performed with no-invasive needles and no electrical currents. Recombinant mouse APN protein, siRNA, AICAR, Compound C or vehicle was administrated intrathecally. Paw-withdrawal latency (PWL) and paw-withdrawal threshold (PWT) tests were used to measure pain sensitivity. Western blotting (WB) was used to detect the expression of spinal AdipoR2 and AMPK.

Results: Either EA or exogenous APN evoked a significant increase of adipoR2 in the spinal cord, deletion of APN abolished EA-induced adipoR2 increase. Both EA and exogenous APN activated spinal AMPK in the WT mice while the deletion of APN abolished EA-induced AMPK activation in the KO mice. Meanwhile, silencing spinal adipoR2, not adipoR1, significantly diminished the analgesic effects of both EA and APN, and blocked EA- and APN-induced AMPK activation in the spinal cord. Furthermore, the intrathecal administration of AICAR (AMPK activator) alleviated both mechanical allodynia and thermal hyperalgesia which were reversed by pre-injection of Compound C (AMPK inhibitor) in CFA-induced mice. EA- and APN-produced analgesic effects were also partially diminished by pre-injection of Compound C indicating spinal activation of AMPK is required for EA- and APN-produced analgesic effects.

Conclusion: EA stimuli at acupoint GB30 alleviate the sensitivity of mechanical allodynia and thermal hyperalgesia in CFA-inflamed mice at least partially through APN/AdipoR2-mediated AMPK activation at the spinal level.

Abstract submission # 219

Study on Effect of Acupuncture at Daimai (GB26) on White Adipose Tissue Browning in Abdominal Obesity Mice

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Objective: To observe the effects of acupuncture on the protein and gene expression levels of uncoupling protein 1 (UCP1), peroxisome proliferators-activated receptor γ coactivator-1 α (PGC-1 α) and PR domain containing 16 (PRDM16) in the body weight, abdominal circumference and visceral adipose tissue of abdominal obesity mice.

Methods: Male C57BL/6J mice were randomly divided into 3 groups, with 6 mice in the blank group, 29 mice in the modeling group, and the abdominal obesity mice model was established by feeding them with high-fat diet. Then the 12 successful modeling mice were randomly divided into the model group and the acupuncture group, 6 mice in each group, feeding them with high-fat diet continuously. The mice in the acupuncture group were placed in the fixation, and the two sides of Daimai (GB26) points were pricked, with a depth of 3 to 4 mm, and administrated electroacupuncture at a dilatation wave (2 Hz/15 Hz, 1.5 mA), for 15 min once every other day. The model group and the blank group were fixed synchronously for a total of 8 weeks. The abdominal circumference and body weight of mice were measured. The histopathological changes of white fat tissue (WAT) around the bilateral kidney and the brown adipose tissue (BAT) were observed by hematoxylin and eosin staining. The mRNA and protein expression levels of UCP1, PGC-1 α and PRDM16 in WAT were detected by using quantitative real time PCR and Western blotting, respectively.

Results: Comparison of abdominal circumference and body weight: Before intervention, compared with the blank group, the body weight and abdominal circumference of the model group were significantly increased ($P < 0.05$). After the intervention, compared with the blank group, the body weight and abdominal circumference of the model group were significantly increased ($P < 0.05$). Compared with the model group, the abdominal circumference and body weight of the acupuncture group were significantly decreased ($P < 0.05$).

Conclusion: Acupuncture at Daimai (GB26) point can effectively promote browning of white fat tissue in abdominal obesity mice, and further play a role in reducing weight and fat.

Abstract submission # 191

Study on the Effect of Acupuncture at Sanyinjiao (SP6) with Deqi on Patients with Primary Dysmenorrhea with Cold-Dampness Stagnation Syndrome

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Objective: Based on acupuncture treatment for patients with primary dysmenorrhea, to explore the effect of Deqi induced by needling Sanyinjiao (SP 6).

Methods: The trial design is randomized controlled trial. The patients

were randomly divided into two groups (the group of promoting Deqi and the group of avoiding Deqi). There were two indicators as subjective and objective effect indicators. Visual Analog Scale (VAS) was used to evaluate the degree of dysmenorrhea pain before and after acupuncture intervention. Infrared thermal image temperature on the acupoints was recorded at 8 time points. Deqi of the subjects was recorded by Clinical Evaluation Scale of Needle Sensation. Based on the actual Deqi situation, the patients were further categorized into the actual Deqi group and the non-actual Deqi group, and the differences of the indicators between the two groups were compared.

Results: (1) The rate of actual Deqi in promoting Deqi group was 93.75%, and the rate of actual Deqi in avoiding Deqi group was 58.62%. The random groups comparison showed that the score of VAS after intervention was significantly lower compared with that before the intervention in both groups ($P < 0.05$), however, the differences between the two groups were not significant. There were no significant differences in the infrared thermal image temperature on the acupoints between the two groups. (2) The secondary level comparison showed that the VAS of the actual Deqi group after intervention was significantly lower compared with that before the intervention ($P < 0.05$). But the non-actual Deqi group did not have significant difference of VAS score between before and after intervention ($P > 0.05$). The former group's infrared thermal image temperature on SP6, SP7, SP9 and SP10 at multiple time points was higher than that of the latter ($P < 0.05$).

Conclusion: Needling SP 6 needs to achieve Deqi is essential for have analgesic effects. Deqi could increase the temperature of infrared thermal images of SP6 and its nearby spleen meridian points.

Abstract submission # 122

Study on the Mechanism of Evodiamine Intervention on Insomnia Animal Model

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Pharmaceutical treatments for insomnia typically involve the use of benzodiazepines and non-benzodiazepines. However, these hypnotics are generally not recommended for long-term use due to potential side effects and drug dependence. Therefore, potentially effective agents from traditional Chinese medicine should be explored. Evodiamine, an indole alkaloid derived from the fruit of *Evodia rutaecarpa*, has shown various beneficial effects, including anti-obesity, anti-inflammatory, analgesic, antibacterial, antidepressant, and neuroprotective properties. This study aims to investigate the potential benefits of evodiamine on p-chlorophenylalanine (PCPA)-induced insomnia in mice and to determine whether such an improvement is linked to the gut microbiota. The results showed that evodiamine could significantly suppress the locomotor activity, decrease the sleep latency, and increase the sleep duration in PCPA-induced insomnia in mice. Moreover, evodiamine increased the serum levels of 5-hydroxytryptamine and γ -aminobutyric acid, as well as regulated the composition and structure of the gut microbiota in insomniac mice. At the phylum level, evodiamine reduced the *Firmicutes/Bacteroidota* ratio, *Deferribacterota*, *Desulfobacterota* and *Actinobacteriota* and increased the relative abundance of *Patescibacteria*. At the genus level, evodiamine reduced the relative abundance of *Muribaculaceae*, *Mucispirillum*, *Bifidobacterium*, *Turicibacter*, *Lachnospiraceae_NK4A136_group* and *Enterorhabdus*

and increased the relative abundance of *Bacteroides*, *Lactobacillus* and *Staphylococcus*. Taken together, our results demonstrate that evodiamine can ameliorate PCPA-induced insomnia, and that the mechanism of these beneficial effects acts, at least in part, through the serotonin system and modulation of gut-microbiota.

Abstract submission # 170

Study on the Mechanism of the Wake-promoting and Neuroprotective Efficacy of Acupuncture at Hand Twelve Jing-Well Points for Traumatic Brain Injury

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Traumatic brain injury (TBI) induced coma is a key factor in poor clinical prognosis and poses a significant burden to families and society. However, there is a lack of first-line wake-promoting therapies with proven efficacy and ultra-early intervention. Acupuncture has been certified by the World Health Organization as an effective treatment for a variety of diseases. The Hand twelve Jing-Well Points (HTJW) acupuncture therapy is a unique traditional Chinese medicine (TCM) first-aid treatment that has been proven to be effective for comatose patients and improves the neurological deficits of patients suffering from TBI, stroke, or carbon monoxide poisoning. Our team has conducted a series of studies on the wake-promoting and neuroprotective mechanisms of the HTJW acupuncture therapy. Based on behavioral and EEG platforms, we confirmed the wake-promoting effect of the HTJW acupuncture therapy, focusing on the ascending reticular activating system (ARAS), and found that the P2RX7 pathway of dopaminergic (DAergic) neurons in the ventral periaqueductal gray (vPAG) region may mediate the wake-promoting effect of the therapy and modulate the excitability of orexinergic (ORXergic) neurons in the lateral hypothalamus. Subsequently, chemogenetic techniques were applied to discover that the vPAG DAergic neurons-lateral hypothalamic ORXergic neurons circuit may be the key link to promote wakeup. Regarding its neuroprotective effect, the therapy improved the symptoms of neurological deficits in TBI rats, and the brainstem JNK/p38 MAPK pathway mediated this effect, and it is speculated that improving inflammation is an important way for the therapy to improve the symptoms of neurological deficits. The HTJW acupuncture therapy provides a new idea for post-TBI treatment, which is especially important to fill the gap of pre-hospital emergency care, and still needs a lot of research and attention in the future to promote its clinical translation.

Abstract submission # 192

Study on the Optimization of Chinese Medicine Rehabilitation Program for Post-stroke Dysphagia

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Objective: To evaluate the effect of nape cluster acupuncture in improving delayed swallowing initiation and pharyngeal retention, and to explore the mechanism of nape cluster acupuncture by utilizing functional nuclear magnetic brain and other techniques.

Methods: A clinical study of 252 patients with dysphagia in oral and pharyngeal phases was carried out with the traditional Chinese medicine (TCM) rehabilitation program of "nape cluster acupuncture." The were randomly divided into an experiment group and a control group in a ratio of 1:1. In the experimental group, acupoints selected in the oral phase were bilateral Fengchi, blood supply, clip Chengjian, Xiaguan, Yingxiang, tongue center, Lianquan, external Jinjin and external Yuyi; and in the pharyngeal phase, acupoints selected in the pharyngeal phase were bilateral Fengchi, Cataract, blood supply, choking, swallowing, articulation, Lianquan, external Jinjin, and

external Yuyi. The control group underwent conventional swallowing rehabilitation function training. The intervention session was 30 min/time, once a day for 5 d every week with a total of 3 weeks. The efficacy of the treatment was assessed by three assessment methods, namely, standardized swallowing function assessment scale (SSA), modified Barthel index, and functional magnetic resonance imaging.

Results: After treatment, the results of SSA score and modified Barthel index of the experimental group were significantly better than those of the control group ($P < 0.01$; $P < 0.01$), and acupuncture could activate the neural activities of swallowing-related brain areas.

Conclusion: Acupuncture administered according to different stages of dysphagia can effectively improve dysphagia and improve patients' quality of life.

Abstract submission # 186

Targeted Metabolomics Study on Massage Antipyretic Therapy on Lipopolysaccharide-induced Fever in Juvenile Rabbits

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Objective: To investigate the mechanism of the six-method Massage antipyretic process (SMAP) and its influence on the body's metabolic state.

Methods: The random number table method was used to divide 24 New Zealand 2-month-old rabbits with qualified basal body temperature into a control group, model group and Massage group ($n = 8$ per group). The model group and massage groups were injected with 0.5 $\mu\text{g/mL}$ lipopolysaccharide (1 mL/kg) into the auricular vein, and the control group was injected with the same amount of normal saline at the same temperature. One hour after modelling, the massage group was given SMAP (opening Tianmen, pushing Kangong, rubbing Taiyang, rubbing Erhougaogu, clearing the Tianheshui and pushing the spine). The change of anal temperature 5 h after modelling was recorded to clarify the antipyretic effect.

Results: After modelling, the rectal temperature of the juvenile rabbits in the three groups increased. The rectal temperature of the model group was higher than that of the control group 5 h after modelling, and the rectal temperature of the Massage group was lower than that of the model group ($P < 0.05$). The antipyretic mechanism is related to the regulation of the synthesis of phenylalanine, tyrosine and tryptophan, as well as the pentose phosphate pathway. Compared with the model group, the plasma interleukin (IL)-1 β , IL-6, interferon- γ , toll-like receptor 4, the mechanistic target of rapamycin complex 1, indoleamine 2,3-dioxygenase 1, aryl hydrocarbon receptor, liver aspartate transaminase, alanine transaminase and L-glutamate dehydrogenase expression in the massage group were significantly decreased ($P < 0.05$).

Conclusion: The mechanism of SMAP therapy is related to regulating the expression of peripheral inflammatory factors and metabolic pathways.

Abstract submission # 118

The Adjunctive Effect of Acupuncture for Advanced Cancer Patients in a Collaborative Model of Palliative Care: A three-arm Randomized Trial

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Background: Improved cancer survival has put increasing demands on cancer care.

Objective: The study aimed to evaluate the adjunctive effect of

acupuncture for advanced cancer patients in a collaborative model of palliative care.

Methods: This is a single-blinded, randomized, sham-controlled trial. One hundred twenty advanced cancer patients undergoing palliative care will be randomized in a ratio of 2:1:1 to manual acupuncture plus standard care group (ASC), sham acupuncture plus standard care group (SSC), and standard care group (SC). Patients in ASC and SSC will receive 9 sessions of acupuncture or sham acupuncture for 3 weeks, and will be followed up for 2 months. The primary measure is the change from baseline score of the Edmonton Symptom Assessment System at 3 weeks. The secondary measures include the Brief Fatigue Inventory, Hospital Anxiety and Depression Scale, Insomnia Severity Index, Numeric Rating Scale, and European Organization for Research and Treatment of Cancer Quality of Life 15 items Questionnaire for Palliative Care.

Results: From September 2022 to December 2023, a total of 109 cancer patients were screened at the Hong Kong main center. Out of these, 44 patients declined participation or were ineligible. Among the 65 enrolled patients, 32 were randomly assigned to ASC, 16 to SSC, and 17 to SC. Of the enrolled patients, 57 completed data collection for both interventions and follow-ups, while the remaining patients are still undergoing intervention or follow-up. Additionally, there were 34 enrolled patients at the Chongqing sub-center and 9 enrolled patients at the Guangzhou sub-center. In total, 108 subjects were recruited, completing 90% of the recruitment goal. No serious adverse events related to the treatment were reported.

Conclusion: The finding of this trial will provide high-quality evidence on the adjunctive effect of acupuncture to standard care on advanced cancer patients undergoing palliative care.

Abstract submission # 126

The Application of the Singing Bowl Therapy: A Scoping Review of Clinical Studies

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Objective: The bowl-shaped instrument called the singing bowl is made of various metals to generate sounds by hitting or rubbing its edges with mallets. It originated in Xizang and was modified by Hansde Back from the Netherlands, leading to its gained popularity. As a type of somatic vibration music therapy, the singing bowl therapy generates vibration on the body surface and emits sounds of varying frequencies by striking different materials and sizes of singing bowls, which is also considered as a non-pharmaceutical therapy and traditional Chinese medicine five-tone therapy. We aimed to summarize the current application and clinical evidence of the singing bowl therapy.

Methods: We searched databases including Chinese National Knowledge Infrastructure, VIP, Wanfang, SinoMed, Embase and PubMed from their inception to January 2024 to include clinical studies of singing bowl therapy, regardless of research type, population, and intervention. The data were extracted and qualitatively described.

Results: Fourteen studies published between 2008 and 2023 were included, with six published in Chinese and eight published in English. The studies were conducted in various countries with six conducted in China, three in America, two in Germany, one in Australia, one in Chile, and one in Korea. Half of the studies were randomized controlled trials ($n = 7$), while the others included single-arm trials ($n = 4$), non-randomized controlled trial ($n = 1$), cohort study ($n = 1$), and cross-sectional study ($n = 1$). Singing bowl therapy was applied to treat medical conditions including neurophysiological function ($n = 4$), insomnia ($n = 3$), mental health ($n = 3$), pain ($n = 2$), Parkinson's disease ($n = 1$), and infrared thermography ($n = 1$). Evidence showed the singing bowl therapy has the potential to alleviate anxiety, depression, fatigue, insomnia, and autism, as well as regulates blood

pressure and heart rate.

Conclusion: The singing bowl therapy is applied worldwide, primarily as a treatment for mental disorders. Further research is needed to explore the effects of this therapy.

Abstract submission # 203

The Coincidence of Perforators and Acupoints of Lower Extremity Flaps: A Preliminary Study

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Background: Several reports have shown that there is a coincidence relationship between perforators and acupoints. However, objective experimental methods are still lacking and more systematic studies are needed.

Objective: We designed a preliminary study to analyze the coincidence rate of acupoints with perforators.

Methods: Healthy volunteers were recruited with the inclusion and exclusion criteria. Three traditional Chinese medicine (TCM) clinical physicians determined acupoints in areas of the lower limb of participants. Two microsurgeons sketched corresponding regions on the body surface based on the most common skin flap operation sites, located bone markers, and drew the skin flap axis. Doppler ultrasound was used to mark the perforator point, and the distances measured for both points.

Results: The distance between 23 acupoints and perforator points measured was less than 5 mm for the majority of acupoints. Among them, the coincidence rate of Futu (ST32) and the near perforator is the highest, reaching up to 98% and only four acupoints are lower than 60%. There are 651 acupoint location data that are overlaid, which refers to their distance less than 5 mm from the perforator.

Conclusion: The location of acupoints and perforator points have high overlapping rates within the range of 5 mm in the flap area of lower limbs. There is always a consistent perforator around the acupoints chosen by the TCM practitioner through this experiment. We identified high relevance of the situation between acupoints and perforating vessels, which may give some hints for further TCM acupoint elucidation.

Abstract submission # 190

The Crosstalk Between the Hallux (Dadun Acupoint) and Reproductive System in Brain

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The liver meridian, starting from the hallux and connecting with the genitals along the lower limbs, reflects the vital phenomenon of the somato-somatic relationship. Based on the principle of “where the meridians pass through, the main treatment will reach,” liver meridian acupoints are widely used in clinical practice for the treatment of gynaecological pain, but the scientific connotations remain to be elucidated. The cortical neighboring relationship between hallux (Dadun) and genitalia has been revealed. The degree of functional reorganization of the primary somatosensory cortex (S1) is positively correlated with the intensity of peripheral noxious stimuli. Clinical evidence showed that acupuncture could regulate the functional reorganization of the cerebral cortex. Based on these data, this study was aimed to investigate, (1) the basis of functional reorganization between Dadun acupoint area and genital area in S1; (2) the role of acupuncture in regulating brain functional reorganization in alleviating pain in mice with provoked vestibulodynia. Our results revealed that: in the physiological state, neurons of the genital and foot representative areas of S1 border and interpenetrate each other in mice, with nearly half of the recorded neurons having the receptive fields of both sites; and deafferentation of hindlimbs or genitals

induced altered responsiveness of pyramidal neurons and interneurons to peripheral stimuli. Based on the provoked vestibulodynia mouse model, we found that peripheral stimuli increased the strength of coupling between S1 interneurons and pyramidal neurons, and that acupuncture at the Dadun acupoint could downregulate the strength of this coupling at both the population and single-cell levels, thereby correcting the non-adaptive reorganization of local brain regions to alleviate the nociceptive symptoms in the model mice. Our work not only deepens the understanding of meridian theory but also elucidates the neurobiological mechanism underlying acupuncture for alleviating pain in provoked vestibulodynia.

Abstract submission # 236

The Dynamic Process of Acupoint Sensitization in the Rats with Irritable Bowel Syndrome

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Objective: Irritable bowel syndrome (IBS) model rats were used to observe the correlation between Evans blue (EB) surface exudation points, and commonly used acupoints for the treatment of IBS and explore the regularity of acupoint sensitization in IBS and provides guidance for the clinical treatment of this disease.

Methods: Male Wistar rats were randomly divided into control and model group, with 8 rats in each group. The rats in the model group were treated with water avoidance stress mixed unpredictable stimulation to induce IBS model. After the modeling, the behavior state of rats was detected by open field and elevated cross maze. Abdominal wall withdrawal (AWR) and rectus abdominis electromyogram were used to detect the colonic pain threshold of rats in each group. The rats were observed after injecting 2.5% EB solution into the rat tail vein, and then the distribution of blue exudation points on the surface of rats were observed and analyzed the correlation between the distribution position in the body surface of rats and the common acupoints for the treatment of IBS.

Results: The number of entries into the central area of the model group decreased significantly ($P < 0.05$), and the proportion of open-arm access time in the model group was reduced significantly ($P < 0.05$). The AWR score of the model group was increased in the colonic hyperalgesia test ($P < 0.001$). After EB injection, compared with the control group, the exudation points of the rats in the model group were significant in the Feishu area ($P < 0.001$), Dachangshu area ($P < 0.001$) and Tianshu area ($P < 0.001$).

Conclusion: Acupoint sensitization can occur in IBS rats, and the acupoint sensitization areas mainly located in Feishu, Dachangshu and Tianshu points of rats.

Abstract submission # 224

The Effect of Acupuncture Intervention on Limb Motor Dysfunction at Different Timing during the Acute Phase of Stroke

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Objective: To observe the improvement of limb motor dysfunction and quality of life with acupuncture intervention at different timing during the acute phase of ischemic stroke.

Methods: The study was a multicenter prospective follow-up cohort study of patients with acute stroke less than 10 d in 4 grade-A tertiary hospitals in Tianjin from October 2020 to September 2022. Three cohorts were formed by the timing of receiving “Xingnao Kaiqiao”

acupuncture treatment within 10 d of onset, namely, the interventional acupuncture within 1–3 d of onset (Cohort A), 4–7 d of onset (Cohort B), and 8–10 d of onset (Cohort C). Three cohorts received acupuncture treatment for at least 2 courses. The primary outcomes were the modified Rankin Scale score and the proportion of patients with good functional outcomes. A logistic regression was constructed to analyze the effects of different timing of acupuncture intervention on the efficacy of limb motor dysfunction. Secondary outcomes were Fugl-Meyer assessment score and European Five Dimensional Health Scale score. Outcomes were evaluated at pre-treatment and 6-month follow-up from the onset.

Results: All scores and the proportion of patients with good functional outcomes were better in Cohorts A and B than those in Cohort C ($P < 0.001$). The timing of acupuncture intervention was associated with the likelihood of conversion to a non-disabled state 6 months after onset with a disabled state ($P < 0.05$). Patients in Cohorts A and B were more likely to a non-disabled status at 6 months of onset than those in Cohort C. No adverse events were reported in three cohorts.

Conclusion: Acupuncture is effective and safe for patients with limb motor dysfunction during the acute phase of ischemic stroke. Acupuncture intervention within 1–7 days of onset is more conducive to restoring functional independence, improving limb motor function and quality of life compared to that within 8–10 days of onset.

Abstract submission # 226

The Effect of Transcutaneous Cranial-auricular Acupoint Stimulation on Resting-state Brain Networks in Depression Patients: An Exploratory Study

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Objective: Major depressive disorder (MDD) is associated with abnormal activity of brain functional networks. Electroencephalographic (EEG) microstates are one of the effective indicators for studying brain functional networks and exploring the brain mechanisms of mental disorders. A previous multicenter randomized controlled trial ($n = 470$) has shown that transcutaneous cranial-auricular acupoint stimulation (TECAS) is effective in the treatment of MDD, but its mechanism is not clear. This study aimed to observe the effect of TECAS on the EEG microstate of MDD patients and to screen the suitable population.

Methods: Fifty patients with mild to moderate MDD were included and given 8 weeks of TECAS treatment. Hamilton Depression Scale and Hamilton Anxiety Scale were assessed before and after the treatment, and closed-eye resting-state EEG signals were collected. The EEG data were preprocessed and analyzed by MATLAB, EEGLAB, and other tools for microstate analysis, including duration, frequency, and coverage, and the differences of each index before and after treatment were compared.

Results: Patients with MDD had significantly higher duration, coverage, and frequency of microstate A versus microstate C after 8 weeks of TECAS treatment ($P < 0.001$). Patients who responded to TECAS treatment exhibited higher microstate D before treatment.

Conclusion: The antidepressant efficacy of TECAS is related to EEG microstates A and C in patients with MDD. Microstate D may be a neurophysiological characterization index for predicting the efficacy of TECAS in patients with MDD. Modulation of the “Default Network-Salience Network-Attention Network” may be one of the mechanisms for the antidepressant effect of TECAS.

Abstract submission # 123

The Effectiveness of Exercise on Adolescent Idiopathic Scoliosis: A Systematic Review and Meta-Analysis

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Objective: Adolescent idiopathic scoliosis (AIS) is the deformity of spine affecting children and adolescents which causes surface deformity. AIS highly affects the quality of life and self-esteem of the patients. The aim of the study was to evaluate and provide objective evidence on the effectiveness of specialized exercise regimens on improving AIS, and determine whether exercise is an effective alternative treatment for AIS.

Methods: In this review, seven electronic databases (MEDLINE/PubMed, EMBASE, CENTRAL, SIGLE, CNKI and Wanfang) were searched for studies published from January 2012 to December 2023. The primary outcomes were progression of deformity in terms of Cobb’s angle or angle of trunk rotation (ATR), and quality of life measured by validated tools such as the Scoliosis Research Society-22 (SRS-22) questionnaire. The secondary outcome was adverse events reported in the studies included. The extracted data were used in subgroup analysis. Meta-analysis was then conducted by using RevMan Web.

Results: Ten studies matching the inclusion criteria were selected. The subgroup analysis result suggested that the specialized exercise showed significant improvement compared to control in terms of degree of deformity. Three studies were included in the meta-analysis with 127 participants pooled. The result showed the Schroth-based exercise was more favorable than standard care in terms of Cobb’s angle improvement. The mean difference was -2.92 (95% confidence interval: $-5.78, -0.06$).

Conclusion: The results showed positive evidence for providing specific exercise to AIS patients in terms of deformity improvement, especially Schroth-based exercise. More consideration should be made in the future for including Schroth-based exercise in routine care for AIS in clinical guidelines. The effect of other forms of exercise on AIS should also be explored to broaden more alternative treatment options in improving both progression of deformity and quality of life outcomes of AIS patients.

Abstract submission # 69

The Efficacy of Moxibustion on the Pressure-pain Thresholds and Serum Concentrations of Substance P, Leukotriene B₄ in Patients with Rheumatoid Arthritis

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Objective: This study aimed to evaluate the efficacy of moxibustion on the pressure-pain thresholds (PPTs) of the affected joints and trapezius, and the concentrations of substance P (SP), leukotriene B₄ (LTB₄) in serum of rheumatoid arthritis (RA) patients, and to investigate the analgesic mechanism of moxibustion on improving RA.

Methods: A total of 70 patients with RA were randomly and equally classified into the control and treatment groups. The control group was treated with routine drug therapy, while the treatment group received routine drug therapy and moxibustion. Both groups were treated for 5 weeks. After treatment, the PPTs, the clinical symptoms, laboratory indicators of the RA participants in the two groups were evaluated.

Results: A total of 66 patients eventually completed the study, with 4 patients dropped out from the control group. Trial endpoints were

change (Δ) in the PPTs of the affected joints and trapezius, and clinical symptoms, measured by tenderness joints count (TJC), swollen joints count (SJC) and disease activity score of 28 joints (DAS28), and laboratory indicators, measured by the level of SP, LTB4, tumor necrosis factor- α (TNF- α) and interleukin-1 β (IL-1 β). Δ PPTs of the affected joints, Δ TJC, Δ SJC, Δ SP, Δ LTB4, Δ TNF- α , Δ IL-1 β in the treatment group were superior to those of the control group. Δ SP in the treatment participants had a significant negative association with Δ PPTs of the affected joints ($r < 0$, $P < 0.05$).

Conclusion: Moxibustion can enhance the efficacy of conventional Western medicine on RA patients. It can not only improve inflammation by affecting inflammatory factors, but also improve the PPTs of the affected joints by affecting neuropeptide SP, to achieve analgesic effect on RA patients. This result may indirectly reflect the improvement of peripheral hyperalgesia in RA patients, which is worthy of further in-depth investigation.

Abstract submission # 83

The Exciting Potential for Our Profession Possible through Case History Sharing

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Within the practices of every Oriental medicine clinic around the world, through their many hours of treating, their ongoing study, intuition, and trial and error, practitioners often develop unique approaches that seem to work.

This is pure clinical gold that has the potential to be shared with and eventually validated by our clinical community. The modern information technology provides the opportunity to provide online Case History Sharing Platforms (CHSP) to facilitate sharing of these real-world clinical insights. CHSP must conform to guidelines including core outcome set and CARE for uniformity and need to include an easy means for initial and then further real-world validation by other practitioners. Facilitating importation of case history (CH) treatment details to clinical registries will be a useful feature. They could be used as a basis for patient treatments, and their use in registry supported clinics will provide a mechanism for real-world validation of treatment strategies by many other practitioners. Conversely, registries should also allow easy sharing of favoured treatment approaches to CHSP by participating practitioners.

Real risks are on the horizon. It is strongly proposed that CHSP should be restricted to suitably qualified practitioners and these data not made available to publicly accessible AI. CH data should be used as supplemental information to be used by fully trained practitioners to help them make informed decisions, and not be shared online with partially trained or untrained people. Without such steps AI is likely to disrupt our profession, as it has the potential to and will very likely devastate many others. The author has recently launched a CHSP, free for use by qualified Oriental Medicine practitioners. This presentation will outline some of the features of this CHSP and discuss the exciting possibilities this project should open to our profession.

Abstract submission # 285

The Health-enhancing Roots of East Asian Medicine

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Objective: The dominant medicine in the U.S. is biomedicine; there are other medicines available. East Asian medicine (EAM) is growing fast, and more inclusive than biomedicine. With its whole person focus, it offers a solution to the demand for patient/person-centered care, and a renewed focus on health.

Methods: Using modern scientific methods, history, and interviews, this analysis reviews the qualities of biomedicine and EAM to find useful ways to compare these distinct medical practices. By interviewing practitioners' intentions, and accessing the implications for practice through study of historical tendencies and current scientific research, we aim to elucidate the distinctive characteristics of each medical tradition.

Results: Biomedicine tends to view the human body as fragile and susceptible to diseases, focuses on material sources of pathology in body parts, and since the 16th century has used active and often intense intervention modalities to force response, especially pharmaceuticals and surgery. In contrast EAM takes a trusting view of the organism in its environment, assuming that it can often heal itself if simply triggered by an acupuncture intervention. It treats body-person as whole with all parts networked, and activates the electromagnetic aspect of the body with acupuncture, to bring them back into physiological balance. The difference is enormous, with many implications. The focus on health building in EAM is perhaps the greatest Gift that acupuncture has to offer. We need to recognize and integrate it into research designs that emphasize the layered complexity of EAM care. Dr. Cassidy has developed a toolbox for exploring similarities and differences among medicines, showing how their special gifts can be leveraged to improve healthcare.

Conclusion: EAM is a 'star' among medicines. We must protect its distinctive character and special Gifts from being redefined—and weakened—as an “allied health” profession subsidiary to biomedicine. We need to tend our roots.

Abstract submission # 22

The Impact of Syndrome Differentiation on Treatment Effects and Side Effects in Randomized Controlled Trials of Chinese Herbal Medicine: A Meta-Epidemiological Study

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Objective: The potential impact of incorporating syndrome differentiation in randomized controlled trials (RCTs) on the treatment effects and side effects of Chinese herbal medicine (CHM) remains uncertain. To address this gap, we conducted a meta-epidemiological study comparing the treatment effects and side effects of CHM in RCTs that incorporated syndrome differentiation versus those that did not.

Methods: A comprehensive search was conducted across seven electronic databases to identify systematic reviews and meta-analyses that pooled RCTs evaluating the treatment effects or side effects of CHM. The search covered publications from January 2021 to September 2022. Meta-epidemiological analyses were performed using a two-step method. Subgroup analyses were conducted based on clinical conditions, outcome types, and funding support. Adjustments were made in the meta-regression models to control for potential confounders, including sample size, funding support, and the risk of bias in RCTs.

Results: The study included 137 systematic reviews, comprising 2064 RCTs. RCTs incorporating syndrome differentiation showed slightly smaller binary treatment effects ($P = 0.04$) compared to RCTs that did not incorporate this approach. There was no significant difference in continuous treatment effects ($P = 0.26$) or side effects ($P = 0.66$) between the two groups. Subgroup analyses focusing on circulatory diseases and meta-analyses pooling subjective outcomes revealed slightly smaller binary treatment effects of CHM in RCTs

that incorporated syndrome differentiation compared to those that did not. These findings remained consistent after adjusting for sample size, funding support, and the risk of bias in RCTs.

Conclusion: Incorporating syndrome differentiation in RCTs does not appear to substantially alter the overall treatment effects and side effects observed in the evaluation of CHM. Further research is needed to validate and expand upon these findings, to gain a comprehensive understanding of the role of syndrome differentiation in rigorous scientific evaluation of CHM.

Abstract submission # 266

The Intervention of TYBJC for Prehypertension and Hypertension in Community Health Service Center

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Objective: (1) To investigate the antihypertensive effectiveness of “blood pressure-regulating health exercise (Tiao Ya Bao Jian Cao, TYBJC).” (2) To observe whether people with prehypertension and hypertension can learn and persist in practicing the TYBJC for 4 weeks.

Methods: The TYBJC was a characteristic technique for preventive treatment of hypertension with 8 movements. Based on Academician Shi Xuemin ‘s the academic idea, “blood circulation-activating and wind-dispelling, liver qi- soothing and spleen-invigorating” acupuncture therapy for treating hypertension, acupoints Renying (ST9), Taiyang (EX-HN5), Fengchi (GB20), Hegu (LI4), Quchi (LI11) and Zusanli (ST36) were selected. Integrated the feature of Qi-gong, we used fingers instead of filiform needles to stimulate acupoints. This trial was a single arm survey. According to sample calculation based on the Blood pressure (cuff) in the primary outcome, 100 patients, who visited the 2 Community Health Service Center, had been currently being recruited to receive TYBJC. After standardized teaching, a complete exercise was required to evaluate immediate antihypertensive effect, learning difficulty and patient satisfaction. Patients practiced at home twice a day for 4 weeks. Using “blood pressure diary” as a tool during 4 weeks followed-up to evaluate the home practice efficacy and acceptability, and recording the medication regimen.

Results: A hundred patients with hypertension or prehypertension were involved in this study. All patients could finish the standardized teaching and exercise testing, 83% patients could practice TYBJC at home 4 weeks with different Frequency. The reasons for drop-outs include persistence in difficulties, symptom relief and lost to follow-up. Preliminary statistical analysis showed blood pressure (cuff) was decreased (12.23 ± 5.33) mmHg after the first-time practice TYBJC in field test. In 4-week follow-up, morning blood pressure fluctuation also decreases.

Conclusion: TYBJC is an effective auxiliary method to regulate blood pressure. Most patients are willing to keep practicing TYBJC at home as a method of adjusting lifestyle for managing hypertension.

Abstract submission # 172

The Nested Case-control Study Was Used to Analyze the Factors Influencing the Effectiveness of “Regulating Shen and Strengthening Spleen” Acupuncture in the Treatment of Patients with Irritable Bowel Syndrome

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Objective: Based on the effectiveness of “regulating mind and

strengthening spleen” acupuncture combined with conventional therapy in the real world, this study employed a nested case-control research method to analyze factors influencing acupuncture efficacy in irritable bowel syndrome (IBS) patients. The aim is to guide clinical practice and enhance the clinical effectiveness of “regulating mind and strengthening spleen” acupuncture.

Methods: This nested case-control study enrolled 130 IBS patients who received “regulating mind and strengthening spleen” acupuncture with conventional treatment in a real-world cohort study. Response during follow-up was defined as a reduction of 50 points or more in the Irritable Bowel Syndrome Symptom Severity Scale (IBS-SSS) score. Patients were categorized as responsive and non-responsive, and propensity scoring matched non-responsive cases with responsive ones in a 1:2 ratio. This resulted in 32 non-responsive and 64 responsive cases. Subsequently, single-factor and multiple-factor analyses were conducted on all variables.

Results: 1. Patients with a family history of IBS were less likely to respond (OR = 0.260, 95% CI 0.069-0.979, $P < 0.05$). 2. IBS patients with higher expectations for acupuncture were more likely to respond (OR = 7.893, 95% CI 2.525-24.679, $P < 0.05$). 3. Compared to electroacupuncture, responding to simple acupuncture was more challenging (OR = 0.305, 95% CI 0.099-0.941, $P < 0.05$).

Conclusion: Patients’ expectations, types of acupuncture treatment, and family history of IBS may be factors influencing the efficacy of acupuncture in treating IBS. Patients with a family history of IBS are less likely to respond to the acupuncture treatment. IBS patients receiving manual acupuncture are less likely to respond than those receiving electroacupuncture, indicating a potentially poorer clinical efficacy of longer treatment sessions. IBS patients with high expectations for acupuncture are more likely to respond, achieving better therapeutic outcomes.

Abstract submission # 146

The Potential Correlation Between Acupuncture Sensations and Regional Neural Activity: A Resting-State fMRI Study

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Deqi, the specific sensations patients experience during acupuncture treatment, is commonly used as a clinical sign indicating effective acupuncture and distinguishes verum acupuncture from sham acupuncture intervention. While an increasing number of neurological diagnostic techniques, including electroencephalography, multi-channel functional near-infrared spectroscopy, and functional magnetic resonance imaging (fMRI) have been applied in exploring altered brain activation pattern of Deqi, the correlation between single acupuncture sensations and regional neural activity remains uncertain. Twenty healthy participants received verum acupuncture and sham acupuncture on Lianquan (RN23), an acupoint commonly used to treat dysphagia. Resting-state fMRI scanning was performed before and after the intervention. A modified Massachusetts General Hospital Acupuncture Sensation Scale (MASS) was used to evaluate not only common acupuncture sensations such as sourness, numbness, and heaviness but also a specific sensation that related to the treatment of dysphagia, the foreign body sensation in the throat. Results showed that: (1) The postcentral, frontal, and temporal cortex are the main brain regions

evoked by Deqi; (2) There are correlation between single acupuncture sensations and brain regions evoked by Deqi at RN23: the specific sensation, foreign body sensation in throat, is correlated to the activation of temporal, parietal, putamen and frontal cortex; sourness is correlated to the activation of temporal, putamen, parietal, precuneus, occipital and frontal cortex; numbness is correlated to the activation of temporal, cingulum and caudate cortex; fullness is correlated to the activation of temporal, occipital, putamen and frontal cortex; heaviness is correlated to the activation of frontal, occipital and putamen cortex, etc. Taken together, these results reveal the potential correlation between single acupuncture sensations and regional neural activity, which provides the neural basis for the brain-region specificity of acupuncture sensations. It also highlights the potential of using specific acupuncture sensations as the clinical sign for brain-region-related diseases.

Abstract submission # 243

The Practical Applications of Ultrasound-Guided Acupuncture and Dry Needling in Clinical Settings: A Literature Review

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Objective: The diagnosis and treatment through ultrasound equipment are already being conducted in a wide range. Dry needling and acupuncture are used for many diseases, including the musculoskeletal diseases, and there is a considerable variety of studies on ultrasound-guided technique for needling muscles, tendons, ligaments, and nerves. In this study, we aim to investigate the specific applications and methodologies of ultrasound-guided dry needling and acupuncture for various diseases.

Methods: We conducted an online search on PubMed. All data were collected until June 30, 2023. The study includes case reports, prospective observational studies, prospective controlled studies, retrospective observational studies, and randomized controlled trials on ultrasound-guided dry needling and acupuncture treatments.

Results: A total of 449 papers were identified and, based on inclusion and exclusion criteria, 37 papers were chosen for analysis. Among them, 14 were case reports, 3 were retrospective observational studies, 3 were prospective observational studies, 4 were prospective controlled studies, and 13 were randomized controlled trials.

We found that in musculoskeletal diseases, research focused on the shoulder ($n = 6$), knee ($n = 5$), elbow, and lower extremities ($n = 4$), while in neurological diseases, a majority of research was on stroke ($n = 3$) and postherpetic neuralgia ($n = 2$). The procedural sites were diverse, but it was noted that ultrasound was primarily used on patella tendon ($n = 4$), supraspinatus tendon ($n = 2$), common extensor tendon ($n = 2$), and piriformis muscle ($n = 2$). In ultrasound-guided acupuncture and dry needling, the targeted tissues for procedures were identified in myofascial trigger points (MTrPs, $n = 18$), tendon ($n = 10$), nerve ($n = 8$), and bursa ($n = 1$).

Conclusion: This study was conducted to provide an overview of the status of ultrasound-guided dry needling and acupuncture treatments and to assist in making appropriate selections based on patient conditions and treatment sites. It is anticipated that this paper will serve as a reference when performing ultrasound-guided acupuncture procedures in the clinical field.

Abstract submission # 143

The Somatic Symptoms and Its Influencing Factors in People with High Blood Pressure Who Received Mongolian Mind-Body Interactive Therapy: An Online Cross-sectional Survey

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Objective: Mongolian Mind-Body Interactive therapy (MMIT) relies on patient-centered narrative medicine and the holistic view of traditional Chinese medicine while combining modern psychological theories and methods, which is an on-site population therapy with “patient’s narration” and “doctor’s encouragement” as the core component. Several surveys have shown an association between somatic symptoms and hypertension. The purpose of this survey was to investigate the score of somatic symptoms and influencing factors in people with high blood pressure who received MMIT.

Methods: The questionnaire consisted of 49 questions, including basic information and somatic self-rating scale (SSS) which was used to assess possible somatic symptoms caused by psycho-psychiatric factors. Recruitment was open from May 11 to June 25, 2022, on the online treatment application. All people who actively use the application can access the questionnaire, and the survey excluded non-primary hypertension respondents through questionnaire questions. The chi-square test was used to estimate the variability between positive (scores ≥ 36) and negative somatic symptom scores (scores < 36) in terms of basic information. Binary logistic regression was used to analyze the factors influencing somatic symptoms.

Results: The top three somatic symptoms of 2631 participants who completed the questionnaire were muscle pain (76%), headache and dizziness (72%) and gastrointestinal symptoms (69%). There was a statistically difference ($P < 0.05$) in the probability of somatic symptoms between males (40.81%) and females (55.89%). More Somatic symptoms were associated with female (OR = 2.171, 95% CI: 1.804–2.611) and less symptoms with regular consumption of fruits (OR = 0.659, 95% CI: 0.560–0.777), but are unrelated to the use of MMIT.

Conclusion: Among the respondents who received MMIT, there is no observed relationship between MMIT and somatic symptoms based on the current data, and somatic symptoms were more severe in females, and regular consumption of fresh fruits may be beneficial to less somatic symptoms.

Abstract submission # 11

The Study of the Contemporary Chinese Herbal Treatment of Acne which Based on Data Mining

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Objective: Validated medical records by the contemporary renowned Chinese medicine practitioners were collected and then FP-Growth Association Rule Analysis was undergone in order to reveal effective herbal combinations, and to discover new knowledge, such that a step forward in clinical and research field can be made.

Methods: 448 qualified medical records of acne treatment were collected and saved in Medcase V3.2 Software. Medical Record Data Mining Platform composed of strategic templates was established after 361 clinical symptoms were standardized with accumulated 2699 times of standardization. By using Medcase V3.2 Software, FP-Growth Association Rule Analysis Model, Medcase Record Mining System, Association Rule Analysis Platform, Xminer Operation Tool and FP-Growth Association Rule Analysis were performed. Empirical conclusions which explained by Chinese medicine theory were drawn.

Results: In the Medicine Internal Association Rule, pairing use like Forsythiae Suspensae Fructus and Salviae Miltiorrhizae Radix, Lonicerae Flos and Forsythiae Suspensae Fructus, Moutan Radicis Cortex and Poria, Atractylodis Macrocephalae Rhizoma and Poria were found. In the External Association Rule between medicine and therapeutic principle, dispersing stagnant liver qi has a higher confidence with Bupleuri Chinensis Radix and Moutan Radicis

Cortex. Clearing the stomach has a higher confidence with with Mori Albae Radicis Cortex and Eriobotryae Japonicae Folium. Detoxicating has a higher confidence with Rehmanniae Radix, Lonicerae Flos and Artemisiae Capillaris Herba.

Conclusion: Commonly used herbal medicines in treating acne could be found out by focusing on the frequency and combinations of the herbal medicine. By association rule analysis, relationship among therapeutic principle, herbal medicine and symptoms can be described quantitatively. By connecting symptom-therapeutic principle-herbal medicine, the results can be a reference for clinical practice. This explains data mining and FP-Growth Association Rule Analysis is practical and useful in applying to medical records in Chinese medicine.

Abstract submission # 132

The Relationship between the Prenatal Traditional Chinese Medicine Constitution Distribution of Females in Hong Kong and their Relevant Postnatal Condition

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Objective: We try to investigate the distribution of the prenatal traditional Chinese medicine (TCM) constitution distributions of females in Hong Kong, along with their health condition and relative factors through this study. By using a Decision Tree model of data mining, we aimed to analyze and categorize the relationship and classification rules among the prenatal TCM constitution and different postnatal TCM symptoms of the females. Furthermore, statistical analysis of the distribution of these postnatal symptoms was also conducted.

Methods: Between May 2013 to May 2017, 200 Hong Kong females, who were after their delivery within 100 d, were invited to join the survey. This study comprised 2 parts: (1) the standardized Constitution Chinese Medicine Questionnaire (CCMQ) and (2) the self-designed questionnaire about postnatal condition in TCM. After the investigation, all the raw data were exported to Excel for preprocessing and encoding, and then a statistical analysis was conducted. The Classification Tree algorithm of the Orange software was used for mining the data and classification rules were developed among the different types of TCM constitution and postnatal symptoms by classification through building a decision tree model.

Results: There were 200 questionnaires sending out to the females who had fulfilled the inclusion criteria. We identified the TCM constitution type distribution including single and complex TCM constitution types. Among all the postnatal TCM symptoms, prolonged lochia was the most common, followed by tiredness, then abnormal sweating. Postpartum prolonged lochia was diagnosed in 40.2% of cases, postpartum pain in 9.8%, with both coexisting in 22.0%. Classification rules for different postnatal TCM symptoms and TCM diagnosis of postpartum prolonged lochia and postpartum pain were generated.

Conclusion: The study allows us to better understand the distribution of TCM constitution among females in Hong Kong and different postnatal TCM symptoms in the community.

Abstract submission # 48

Therapeutic Effect and Safety of Moxibustion and Auricular Plaster Therapy for Adolescent Dysmenorrhea

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Objective: To evaluate the therapeutic effect and safety of moxibustion and auricular plaster therapy in the treatment of adolescent dysmenorrhea.

Methods: The research was conducted with a simple randomized non-blind investigation method from January 2016 to December 2017.

Patients from the Nong's Chinese Medicine Clinic (Olympian Clinic) and students from Secondary 2–4 in Ma On Shan Tsung Tsin Secondary School who suffered from dysmenorrhea for more than six months were selected as subjects for investigation. Based on the diagnostic criteria, inclusion criteria and exclusion criteria, patients who met the criteria were enrolled. Based on the “Chinese Medicine New Drug Clinical Guidelines” pain scale, visual analogue scale (VAS), multidimensional scoring system (VMS), and short-term menstrual distress questionnaire (short-form MDQ), the degree of pain was determined. All data were entered into the computer to establish a database.

Results: Of 163 participants recruited in the research, 146 participants completed the treatment and were included in the analysis. After 3 months of treatment, the total effective rate of auricular plaster therapy, simple moxibustion the combination of moxibustion and auricular plaster therapy was 92%, 81% and 96% respectively. The three treatment groups showed significant improvement after treatment for 1, 2, and 3 months in all indexes, including VAS, VMS and total score of MDQ score. None of the three groups of participants reported any adverse effects during the treatment, indicating that the auricular plaster therapy and simple moxibustion had no side effects and was highly safe.

Conclusion: Auricular plaster therapy, moxibustion, and their combination can effectively improve dysmenorrhea in adolescents. The combination of moxibustion and auricular plaster therapy showed superior long-term efficacy compared to auricular plaster therapy alone.

Abstract submission # 281

Therapeutic Effects of Acupuncture of Regulating Qi into Acupoint-line on Sleep Disorders in the Elderly

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Objective: To observe the therapeutic effect of acupuncture of regulating Qi on sleep disorders in the elderly.

Methods: A total of 53 elderly patients with sleep disorders were enrolled. Demographic data were collected, and four acupoint lines, namely Neiguan–Jianshi, Anmian–Fengchi, Taixi–Fuliu, and Guanyuan–Qihai, were acupunctured with horizontal needling to regulate Qi. The treatment was administrated 3 times a week for four weeks per course. The effects were observed after one course and three courses and one month after three courses as a follow-up. The Pittsburgh Sleep Quality Index (PSQI) and Sleep Dysfunction Rating Scale (SDRS) scores were assessed before treatment, after one course and three courses of treatment, and one month after treatment. The results were analyzed using SPSS statistical software.

Results: The effective rate was 77.36% after one course of treatment, which increased to 92.45% after three courses of treatment and remained at 90.57% during follow-up. Compared with the pre-treatment, PSQI and SDRS scores decreased significantly after one course of treatment, three courses of treatment and follow-up after one month ($P < 0.01$), and the efficacy of three courses of treatment was superior to that of one course ($P < 0.01$).

Conclusion: The acupuncture of regulating Qi can effectively and persistently treat sleep disorders in the elderly by improving both the sleep quality and the severity of sleep disorders.

Abstract submission # 271

Effects of Topical Application of Traditional Chinese Medicine on Knee Osteoarthritis: A Systematic Review and Meta-analysis of Randomized Controlled Trials

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Background: Knee osteoarthritis (KOA) is an irreversible disease

which will ultimately induce immobility, especially for the elderly. While surgery is available, there is no curative treatment for KOA. Therefore, studies of a more easily accessible and effective treatment should be investigated.

Objective: The systematic review and meta-analysis aim to assess the efficacy and safety of topical use of traditional Chinese medicine (TCM) from randomized controlled trials (RCTs), and to explore the most often used methods including herbs, dosage form and duration of treatment.

Methods: Searching studies from 9 databases including PubMed, Health & Medical Collection (ProQuest), Scopus, Cochrane library (EBM), EMBASE (OVID), China National Knowledge Infrastructure (CNKI), Wanfang Database and CQVIP to explore all the RCTs relevant to topical use of TCM on KOA patients, from April, 2018 to April, 2023. The Cochrane Collaboration's Review Manager 5.4 software was used to analyze the data, and the Cochrane Risk of Bias tool was employed to assess the risk of bias.

Results: Total 31 studies with 3280 individuals were found, including 24 studies with 2493 participants were assessed in meta-analysis. The most used herbal medicines are *Angelicae Sinensis Radix*, *Common Achyranthis Bidentatae Radix*, *Carthami flos*, *Clematis Radix et Rhizoma*, *Myrrha*, *Olibanum*, and *Chuangxiong Rhizoma*. Topical use of TCM shows better results in terms of visual analog scale (VAS) score with significant difference (mean difference [MD] = -1.12, 95% CI [confidence interval] = [-1.43, -0.80], $Z = 6.95$, $P < 0.00001$) and Western Ontario and McMaster Universities Arthritis Index (WOMAC) score (MD: -7.97, 95% CI = [-10.35, -5.58], $Z = 6.54$, $P < 0.00001$). No serious side effects were recorded.

Conclusion: Topical TCM has shown benefits in treating the symptoms of KOA by reducing pain and inflammation and enhancing the function of knee joints in KOA patients. Nonetheless, various diagnostic criteria, outcome measurements, and a high risk of bias might impact the comparability of these findings. More qualified RCTs in the future are warranted to validate these results.

Abstract submission # 66

The Use of Acupuncture and Massage for Pediatric Patients with Cerebral Palsy: A Systematic Review and Meta-analysis

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Objective: Currently, there is a lack of data on the integration of acupuncture and massage in pediatric patients with cerebral palsy. This review aimed to summarize the existing evidence and provide insights for clinical practice.

Methods: We conducted searches in AMED, EMBASE, MEDLINE and PubMed for studies published between January 2000 and August 2023. Search terms were related to “pediatric,” “acupuncture,” “massage,” and “cerebral palsy.” We included trials and observational

studies that examined the efficacy and safety of massage or acupuncture in patients under 19 years old. Meta-analyses were performed to assess outcomes including effectiveness rate, motor function, muscle spasticity, and daily activities, using a random-effect model. Revman Manager (v5.4) was used to conduct the analysis.

Results: A total of 25 studies with 1481 participants were included, consisting of studies predominantly on acupuncture ($n = 19/25$). The most common outcomes were improvements in motor function ($n = 18/25$) and muscle spasticity ($n = 9/25$). Hegu (LI04, $n = 7$) and Baihui (GV20, $n = 7$) were the most frequent acupoints. Only 13 studies were eligible for meta-analysis. Pooled data analysis showed that the addition of acupuncture with/without massage was more effective than standard care alone or sham acupuncture (odds ratio = 4.08, 95% CI = 1.99–8.34, $I^2 = 46\%$, $P = 0.0001$). Acupuncture significantly improved gross motor function (standardized mean difference [SMD] = 1.25, 95% CI = 0.43–2.08, $I^2 = 92\%$, $P = 0.003$), but did not show a significant effect on activities of daily living (SMD = 0.72, 95% CI = -0.50 to 1.95, $I^2 = 94\%$, $P = 0.25$). Massage was more effective in reducing muscle spasticity than standard care alone (SMD = -0.62, 95% CI = -0.94 to -0.31, $I^2 = 0\%$, $P = 0.0001$). No serious adverse effects were reported by the studies.

Conclusion: The current evidence shows that acupuncture may be potentially effective in improving symptoms and gross motor function in pediatric patients with cerebral palsy, and massage may help improve muscle tone. Future studies should focus on developing implementation strategies to integrate these modalities into the routine care of children with cerebral palsy.

Abstract submission # 108

The Use of an Annotated 3D Model for the Illustration of Acupoint Protocol in Public Health Education

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The visualization of the location of the acupoints is an essential element in public health education. Currently, 2D image presentation provides a limited reference on the anatomical structures and spatial relationship among the acupoints, while a video or live demonstration usually demands significant time and resources for production. This study attempted to look for a cost-effective solution to illustrate the locations of a set of acupoints with an interactive annotated 3D model. To examine the feasibility of this solution, a 3D human model (available at <https://skfb.ly/oPEqt>) was created and annotated with acupressure methods using an online 3D viewer platform (www.sketchfab.com). The acupoint protocol, adopted from an ongoing clinical trial for depression (registration number: NCT05631184), consisted of Baihui (GV20), Yintang (EX-HN3), Neiguan (PC6), Shenmen (HT7), Qihai (CV6), Guanyuan (CV4), Shenshu (UB23), and Yongquan (KI1). The model was distributed to the participants who had been taught these acupoints over 6 months ago, followed by a survey on their viewing experience. They responded using a 5-point Likert scale (1 indicates strongly disagree and 5 indicates strongly agree) and they indicated the model was easy to use (4.2) and clear to understand (4.2) and helped memorizing (4.4). They agreed to keep the model for future reference (4.6) and recommended it to others (4.4). This study revealed that our 3D model is a helpful tool for the illustration of the acupoint locations for public health education.

Abstract submission # 231

Therapeutic Analysis of Laser Moxibustion for Knee Osteoarthritis Patients of Different Kellgren–Lawrence Grades

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Objective: To examine the effects of laser moxibustion on pain and function in patients with knee osteoarthritis of different KL grade.

Methods: A total of 392 symptomatic knee osteoarthritis patients with different Kellgren-Lawrence (KL) grades were randomly assigned to laser treatment or sham laser control group (1:1). The patients received twelve sessions of laser moxibustion treatments or sham three times a week for 4 weeks. Outcomes were measured using Western Ontario and McMaster Universities Arthritis Index (WOMAC) score and Visual analog scale (VAS) scores. The primary outcome measurement was change in WOMAC pain score from baseline to week 4.

Results: Among the 392 randomized participants, 364 (92.86%) completed the trial. Participants with KL grades 2, 3 and 4 had significantly higher pain scores, functional scores, and total WOMAC scores than those with KL grade 1. The Spearman's correlation test results showed a positive correlation between KL grade and WOMAC pain, function, stiffness scores, and the total score. That is, the higher the KL grade, the higher the WOMAC pain, function, stiffness scores, and total score. After 4-week treatment, patients with KL grades 2 and 3 had significantly higher improvement in pain, function, and total scores with KL grades 1, while those with KL grades 2 had significantly higher improvement scores in stiffness than those with KL grade 1. However, patients with knee osteoarthritis with KL grade 4 showed no significant improvement following laser moxibustion treatment.

Conclusion: Laser moxibustion is effective for pain relief and function improvement in patients with knee osteoarthritis of KL grades 2 and 3.

Abstract submission # 107

Thread Embedding Acupuncture for Temporomandibular Disorder: A Pilot Randomized Controlled Trial

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Objective: This pilot study aimed to investigate evaluate the feasibility of a confirmatory randomized controlled trial by considering the efficacy and safety of thread embedding acupuncture (TEA) on temporomandibular disorder (TMD).

Methods: This study was a randomized, assessor-blinded, controlled, two-armed, parallel-designed trial. Thirty patients with TMD were randomly allocated to TEA or usual care groups. The TEA group received TEA treatment at 14 predefined acupoints once a week for 4 weeks, and the usual care group received physical therapy. The primary outcome measure was the average pain visual analogue scale (VAS) score over the last week for temporomandibular pain. Pain intensity was assessed before treatment (baseline), one week after treatment (week 5), and five weeks after treatment (week 9). The trial was approved by the Institutional Review Board of Kyung Hee University Korean Hospital at Gangdong (approval number: KHNMC0H 2021-12-002) and registered with the Clinical Research Information Service of the Republic of Korea (registration number: KCT0007421).

Results: In the TEA group, the average pain VAS score decreased from 56.1 ± 8.99 at baseline to 27.2 ± 22.02 at week 5 ($P = 0.002$) and 36.2 ± 22.50 at week 9 ($P = 0.005$). The average pain intensity in the usual care group decreased from 54.7 ± 13.07 at baseline to 40.4 ± 20.26 at week 5 ($P = 0.011$) and 40.3 ± 19.84 at week 9 ($P = 0.030$). At week 5, the average pain VAS scores between the two groups differed significantly ($P = 0.047$). One mild adverse event was

reported in the TEA group.

Conclusion: TEA significantly reduced the average pain intensity of patients with TMD compared to usual care. We will conduct a larger-scale confirmatory clinical trial by calculating an appropriate sample size based on the results of this pilot study.

Trial registration: This trial was registered with the Clinical Research Information Service of the Republic of Korea (registration number: KCT0007421).

Abstract submission # 152

Topical Chinese Medicine Ointment Therapy for Lateral Epicondylitis: A Pilot Randomized Controlled Cross-over Trial

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Objective: Lateral epicondylitis (LE) induces debilitating pain. It usually takes patients with LE 12 months of nonoperative treatment to relieve the symptoms. Topical Chinese medicine ointment (TCMO) is commonly used by Chinese medicine practitioners in the treatment of LE. Unfortunately, there is no evidence reporting the effectiveness, safety, and feasibility of TCMO.

Methods: This study randomized eligible participants to receive TCMO or no additional intervention in the first 4 weeks. After a 2-week washout period, the interventions of the two groups were interchanged for another 4 weeks. QuickDash score, which evaluated the performance of upper-extremity-related activities, Visual Analogue Scale (VAS), which measured the severity of LE-induced pain, and hand grip strength (HGS) of the affected hand were measured at baseline, week 4, week 6, and week 10. The linear mixed model analyzed the treatment and sequence effect. Adverse events were also recorded.

Results: Compared with receiving no additional intervention, the QuickDash (Est.: -13.8; 95% CI: -22.4 to -5.28; $P < 0.05$) and VAS score (Est.: -2.57; 95% CI: -3.64 to -1.50; $P < 0.05$) of the 22 eligible participants decreased when they were receiving TCMO, indicating an improvement. Their HGS also increased (Est.: 5.34 kg; 95% CI: 2.48 to 8.21; $P < 0.05$). The comparison between participants receiving TCMO first and those who received last showed no significant statistical difference on QuickDash score (Est.: 4.76; 95% CI: -3.81; $P = 0.29$), VAS score (Est.: 0.30; 95% CI: -0.775 to 1.36; $P = 0.59$), and HGS (Est.: -3.16; 95% CI: -6.15 to -0.17; $P = 0.072$). 35 mild adverse events, including itching, were reported but were resolved within 2 hours.

Conclusion: TCMO is a well-tolerated treatment that can improve pain and daily activities of LE patients.

Abstract submission # 167

Treatment of Male Oligospermia and Asthenospermia by Acupuncture with Shu-Mu: Protocol for a Randomised Sham Acupuncture-controlled Trial

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Objective: Male infertility is caused by the dysfunction of sperm production and male hormone secretion of the testis. Although varicocele, vas deferens obstruction and cryptorchidism can be treated or relieved by surgery, there are still lack effective therapies for idiopathic oligospermia and azoospermia due to the unclear etiology. Acupuncture is a widely applied therapy for oligospermia and asthenospermia in China; however, the evidence of its effectiveness is lack.

Methods: A total of 200 patients with oligoasthenospermia will be enrolled and randomly assigned to either the acupuncture group or the

sham acupuncture (SA) group in a ratio of 1:1. Twenty treatment sessions will be provided within 4 weeks. The primary outcome is the change in sperm quality before and after treatment. Sperm quality will be evaluated by semen examination, reproductive hormone level examination, metabolomics analysis and high-throughput sequencing analysis. Secondary outcomes included the 9-item Patient Health Questionnaire (PHQ9) score to assess patients' depression, the 7-item Generalized Disorder Scale (GAD7) score to assess patients' anxiety, and the health-related quality of life score (SF-36) score to assess specific quality of life. We will follow up participants until week 24. All participants who receive the allocation will be included in the statistical analysis.

Discussion: This is a placebo-controlled trial using non-acupoint acupuncture, which might provide a valid blinding effect to participants and minimize the placebo effect. A 24-week follow-up can assess whether a sustained effect of acupuncture for oligospermia and asthenospermia can persist for a long period. As acupuncture is a manipulated intervention, it is difficult to blind the acupuncturists to the treatment modalities.

Abstract submission # 159

Treatment of Peripheral Facial Palsy after COVID-19 Infection with Traditional Chinese Medicine: A Case Report

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Objective: Peripheral facial palsy is characterized by acute peripheral facial nerve paralysis and rises from various conditions such as viral infections. In this particular case possibly linked to COVID-19, a 23-year-old male presented with numbness, facial asymmetry, and ear pain on the right side of the face after COVID-19 infection; these symptoms have persisted for 5 d. Physical examination revealed peripheral facial paralysis of House-Brackmann grade IV.

Methods: Electroacupuncture, oral Chinese medicine prescription, acupoints catgut embedding therapy, plum blossom needle, moxibustion, and other treatments were initiated.

Results: Following 4 weeks of combined treatment, the patient's physical examination was downgraded to House-Brackmann grade I, and treatment was subsequently discontinued.

Conclusion: Traditional Chinese medicine is a safe and promising complementary treatment for the acute management of peripheral facial palsy.

Abstract submission # 165

Tuina Attenuates Neuropathic Pain via Reward Circuit

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Objective: Neuropathic pain severely impacts quality of life. Traditional Chinese massage (Tuina) shows potential as an analgesic therapy, but its mechanisms remain unclear. We investigated whether Tuina attenuates neuropathic pain by activating the mesolimbic reward pathway in the brain.

Methods: Brachial plexus injury (BPI) was induced in neuropathic pain rat model. Rats received daily Tuina post-injury. Mechanical allodynia was measured at multiple time points. Immunohistochemistry assessed γ -aminobutyric acid (GABA) levels in the ventral tegmental area, nucleus accumbens, and striatum.

Results: Tuina significantly attenuated allodynia compared to the BPI

group ($P < 0.05$). At day 7, the level of GABA in the Tuina group was elevated in the ventral tegmental area compared to the BPI group ($P < 0.05$). The levels of both nucleus accumbens and striatal GABA in the Tuina group differentiated markedly from that of the BPI group at day 14 ($P < 0.05$).

Conclusion: Our findings demonstrate Tuina analgesic efficacy and implicate activation of the endogenous opioid-mediated reward pathway in its pain-relieving actions. Tuina may stimulate reward circuits to induce analgesia. These insights provide a neurobiological framework for developing non-pharmacological therapies and integrating traditional medicine for pain relief.

Abstract submission # 135

Multilevel Factors Related to Clinical Efficacy of Traditional Chinese Medicine Massage on Congenital Muscular Torticollis: A Qualitative Study on Doctors' perspective

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Objective: Traditional Chinese medicine (TCM) massage is gaining popularity in parents for treating their children with congenital muscular torticollis (CMT). However, the clinical efficacy varies greatly and few studies investigated factors that affect the clinical efficacy from TCM practitioner's perspective. This study aimed to understand multilevel factors related clinical efficacy of TCM massage on CMT based on TCM practitioners' point of view.

Methods: A qualitative approach using an exploratory cross-sectional descriptive design was used. Data were collected from a purposive sample of 15 participants comprising three different public hospitals specializing in TCM massage for more than 5 years. Data were collected using individual interviews via a semi-structured interview guide. Two voice recorders were used to record the data which were transcribed verbatim. Thematic analysis was used to process the data.

Results: We identified seven factors that influenced efficacy involving TCM massage practitioners, pediatric patients with CMT and their parents. The factors involving the TCM massage practitioners included missing the best treatment timing due to delayed diagnosis and limited clinical experience. The factors involving patients included the progress of CMT and physiological characteristics of the patients. The factors involving the parents of pediatric with CMT included their incooperation during the treatment course, lack of understanding in CMT, and poor compliance.

Conclusion: To our knowledge, this is the first study to explore the factors affecting the clinical efficacy of TCM massage on CMT from the perspective of the TCM practitioners. From their point of view, the difference in the clinical efficacy of TCM massage on CMT depends not only on their own but also on the patients and their parents.

Abstract submission # 39

Unraveling the Biological Mechanism of Blood Stasis Syndrome: A Phenotype-genotype Association Approach toward Precision Medicine

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Objective: In traditional medicine, Blood Stasis Syndrome (BSS) manifests as insufficient blood flow, resulting in fixed pain, a dark complexion, bleeding, and an astringent pulse. Despite previous exploration of BSS pathology, its molecular mechanisms remain elusive due to the inherent challenges of connecting traditional medicine symptoms to genes. This study aimed to elucidate the

underlying mechanisms of BSS through a phenotype-genotype association approach.

Methods: The BSS symptoms were extracted from various studies, establishing linkages to medical terms using the Unified Medical Language System. Subsequently, we connected these terms to genes in the DisGeNET database. The molecular network patterns of BSS symptoms were revealed through an analysis of protein-protein interactions and symptom-gene associations.

Results: Our investigation uncovered 1325 associations among 16 BSS symptoms, encompassing 32 concept-unified identifier (CUI) terms and 937 genes. Network analysis underscored the centrality of Jauns kinase 2 (JAK2), integrin subunit beta 3 (ITGB3), and coagulation factor II, thrombin (F2), revealing associations with multiple BSS symptoms (≥ 5 CUI terms) and numerous protein interactions (≥ 20 interactions). Enrichment analysis pointed to the involvement of BSS genes in critical pathways including the immune system ($P < 0.05$) and hemostasis ($P < 0.05$).

Conclusion: BSS symptoms were linked to genes governing blood coagulation, immune responses, blood flow, and inflammatory reactions. This approach holds promise for extension to establish genotype networks catering to diverse pattern identifications, thereby contributing to personalized diagnosis and treatment.

Abstract submission # 229

Unveiling a New Epoch in Traditional Medicine: Leveraging Generative Artificial Intelligence for Realizing Knowledge Sharing and Value Co-Creation

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Objective: This study explores the transformative potential of generative artificial intelligence (AI), exemplified by ChatGPT, in the context of traditional medicine. The purpose of this research was to investigate how generative AI can facilitate knowledge sharing and value co-creation in traditional medicine, thus bridging the gap between ancient wisdom and modern medical practices.

Methods: An extensive review of literature on traditional medicine, generative AI, and their intersection was involved. Various traditional medicine systems including Ayurveda, Shamanic healing, and traditional Chinese medicine, were examined for their cultural, philosophical, and practical aspects. Additionally, the study delved into the challenges posed by the globalization and adaptation of traditional medicine.

Results: The results reveal that generative AI has the capacity to process and synthesize vast amounts of knowledge involving traditional medicine, making it more accessible and comprehensible to a global audience. AI models customized for specific traditional medical practices offer insights into complex diagnostic methods and treatment approaches. Furthermore, these AI platforms act as bridges connecting practitioners from diverse cultures and facilitating a more profound understanding of traditional practices. In terms of value co-creation, AI-customized models preserve the characteristics of traditional medicine and broadens its global applicability. Practitioners can monetize their expertise by contributing to AI model development, thus ensuring the preservation and evolution of traditional medicine system.

Conclusion: This study underscores the potential of generative AI in reviving and modernizing traditional medicine, promoting its global integration, and enriching the collective medical knowledge. It signifies a pivotal step towards the globalization of traditional medicine and a more inclusive approach to healthcare. The fusion of ancient wisdom with modern technology offers promising prospects for the future of global healthcare, fostering mutual benefits and cultural enrichment.

Abstract submission # 35

Use of Korean Medicine for Patients with Mood Disorders: Analysis of the Korea Health Panel Annual Data 2019

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Objective: Mood disorders are mental disorders represented by unipolar and bipolar disorders. In South Korea, the number of individuals with mood disorders increased by 30.7% from 2016 to 2020, and as of 2020, the number exceeded 1 million. In this study, we used the Korea Health Panel Annual Data 2019 to analyze factors related to visits to Korean medicine (KM) outpatient clinics among adults with mood disorders in Republic of Korea.

Methods: In the cohort, 201 individuals (75.56%) with mood disorders received conventional medicine (CM) treatment (i.e., CM group) and 65 individuals (24.44%) received both CM and KM treatment in 2019 (i.e., integrative medicine [IM] group). To analyze factors related to the healthcare utilization of the subjects, the Andersen healthcare utilization model was used. We performed binomial logistic regression analysis to analyze factors influencing the use of IM among the subjects. The results were presented as odds ratio (OR) and 95% confidence interval (CI).

Results: Chi-square test and *t*-test found some significant differences on residential area ($P = 0.039$), total annual income ($P = 0.042$), presence of disability ($P = 0.040$), and level of pain/discomfort ($P = 0.001$) between CM and IM groups. Meanwhile, the regression analysis found that, compared to the subjects living in Seoul, Gyeonggi, and Incheon, those living in Busan, Daegu, Ulsan, and Gyeongsang more tended to use IM service (OR = 0.38, 95% CI: 0.16 to 0.94), and those suffering from more pain or discomfort also felt inclined to receive IM treatment (OR = 4.57, 95% CI: 1.79 to 11.70). In the IM group, 65 individuals used a total of 790 KM treatment sessions, and the average number of treatments received by per person per year was 12.15. Among the diagnoses for KM treatment in this group, musculoskeletal conditions were the most common (86.46%).

Conclusion: Our findings suggest the presence of pain or discomfort is positively related to the use of KM among individuals with mood disorders.

Abstract submission # 163

Using a Virtual Chinese Medicine Clinic to Promote Interdisciplinary Healthcare Education

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The rapid development of Chinese medicine (CM) in Hong Kong has underscored the need for innovative educational strategies, particularly in preparing students for collaborative practice in the upcoming CM hospital. Scheduled to commence phased operations from 2025, the hospital aims to extend services through District Health Centers, emphasizing integrative primary healthcare. Crucial to this vision is interdisciplinary training between CM and nursing students, fostering a collaborative ethos that promises enhanced patient care. However, the conventional challenges of large-class teaching and disparate schedules among students pursuing different majors have hindered effective common clinical placements. This has resulted in diminished engagement, particularly in non-“core” subjects perceived as less pivotal. In a specific case involving two

universities offering CM courses to distinct student groups, logistical constraints necessitated an alternative to traditional clinical practicums. The solution provided by a flipped classroom approach, leveraged online discussions and case studies to facilitate collaborative design and implementation of patient care plans. This innovative methodology has transformed the learning experience, focusing on patient care and treatment planning, thereby enriching the educational journey for both CM and nursing students. Despite challenges, the integration of virtual clinical placements with online discussions and case studies has yielded compelling empirical evidence of improved student engagement and participation. This approach not only overcomes logistical barriers but also provides a comprehensive and sustainable model for interdisciplinary healthcare education in CM and nursing. As the healthcare landscape evolves, this educational paradigm ensures students are well-equipped for collaborative and patient-centered practice in the dynamic field of CM.

Abstract submission # 166

Vagal Nerve Is Not Involved in the Hypotensive Effects of Acupuncture on Zusanli (ST36)

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Objective: The acupuncture on Zusanli (ST36) was demonstrated to reduce blood pressure; however, the mechanism remains unknown. The current study was to evaluate the effect of autonomic nervous system on ST36-induced cardiovascular response.

Methods: Electrocardiogram, hemodynamic methods, heart rate variability (HRV), Western blotting (WB), pharmacologic inhibition of vagal nerve, and vagotomy were used to study the effect of autonomic nervous system on ST36-induced cardiovascular response in Sprague-Dawley rats.

Results: Acupuncturing on ST36 induced a transient hypotension, decreased heart rate and cardiac contractility, exerting a negative chronotropic and inotropic effect on the heart. HRV for 5 min before and post-ST36 stimulation showed increased low-/high-frequency (LF/HF) ratio, suggesting an increased sympathetic activity. Furthermore, WB results showed that phosphorylated tyrosine hydroxylase was upregulated after removal of the needle, indicating sympathetic activation. Neither atropine nor vagotomy altered hypotension in response to ST36 stimulation, though atropine reversed the negative chronotropic and inotropic effects induced by ST36 stimulation.

Conclusion: These results indicated vagal nerve did not involve in the vasodilation action induced by the acupuncture on ST36.

Abstract submission # 273

Wrist-ankle Acupuncture for Cancer Related Pain: A Perspective Clinical Case Series Study

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Objective: Wrist-ankle acupuncture is a convenient procedure for pain treatment, using needles only at specific points of the wrist and ankle along the longitudinal axis of the limbs.

Methods: We conducted a perspective clinical case series study among patients with cancer related pain in oncology department of Xiyuan Hospital, China Academy of Chinese Medical Sciences from October 2021 to November 2023. Operation points were chosen according to patients' pain location and needles were retained on limbs for 30 min to 1 h per day. Patients could decide on their own if they would like to repeat the treatment for another day during their hospitalization. The primary outcome is numerical rating scale (NRS)

of pain, from 0 to 10, which was evaluated before and after intervention.

Results: We enrolled 134 patients in this study (49 males and 85 females). The major cancer types were head and neck ($n = 37$), gastrointestinal ($n = 29$), breast ($n = 29$), lung ($n = 20$). On average, patients received 3.54 d of wrist-ankle acupuncture, with minimum of 1 d and maximum of 8 d. The mean NRS pain score for all patients were 5.48 ± 1.55 before the treatment and 1.72 ± 1.16 after all interventions, the mean change was 3.75 ± 1.62 . Lung and breast cancer patients' pain score declined more rapidly than other cancer types (mean change score 4.35 ± 1.39 and 4.00 ± 1.25 respectively). Patients who received more than 3-day treatment experienced better pain relief compared with those receiving shorter-course acupuncture (mean change score 4.10 ± 1.66 vs 3.40 ± 1.51 , $P = 0.01$). Wrist-ankle acupuncture had better treatment effectiveness for patients with back-shoulder and waist-leg pain (mean change score 4.09 ± 1.79 and 3.88 ± 1.43 respectively), and sting pain (4.55 ± 1.34).

Conclusion: Wrist-ankle acupuncture could be utilized for cancer related pain especially for limb stabbing pain. Clinical trial is necessary to further evaluate its efficacy and safety.

Abstract submission # 239

Wrist-ankle Acupuncture Induces Pain Relief through a Central Pain-suppression Circuit

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Objective: The mechanism of wrist-ankle acupuncture (WAA), a widely used analgesic therapy with significant clinical effects, was not clarified. We aim to clarify how WAA alleviates chronic neuropathic pain and induces reward effects on rats by focusing on the nucleus accumbens, a pivotal nucleus implicated in analgesia, which provides a new perspective for comprehensively investigating the neurobiological mechanisms of WAA analgesia.

Methods: Two types of neuropathic pain models, spared nerve injury (SNI) model and local inflammation of dorsal root ganglion (LID) model, were used. Behavioral tests were performed using Von Frey, Hargreaves tests, and conditional place preference (CPP). The response characteristics of γ -aminobutyric acid (GABA)-ergic neurons in nucleus accumbens shell (NAcSh) were characterized by immunofluorescence and in vivo multi-channel electrophysiology. The functional activation of neural circuits was confirmed through retrograde tracing. Neural circuits were manipulated (inhibition or activation) by brain microinjection, chemical genetics, and optogenetics.

Results: Acupuncture at ankle, not at Zusanli (ST36), showed an immediate analgesic effect that could be blocked by sciatic nerve anesthesia but not naloxone, and induced CPP reward effect. WAA significantly increased the FBJ osteosarcoma oncogene (c-Fos) and GABA double labeling in NAcSh. Compared to the non-treatment, WAA strengthened the spike discharge and local field potential activity of the interneurons in NAcSh. Retrograde tracing demonstrated that GABAergic neurons in NAcSh received glutamate projection from the infralimbic cortex (IL) during WAA, which was functionally activated. Furthermore, WAA analgesia was attenuated by microinjection of GABA antagonists into NAcSh and chemical genetic inhibition of GABA neurons in NAcSh, and it was mimicked by optogenetic activation of glutamatergic neurons in IL.

Conclusion: WAA analgesia is immediate and region-specific and its signal ascends through the sciatic nerve with no dependence on opioids. Meanwhile, WAA can also induce reward effects during chronic pain. The ILGlu-NAcSh GABA circuit may be involved in both the analgesic and reward effects of WAA.