Clinical and Scientific Research on Acupuncture in Treating Pain Syndrome

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M.D./Ph.D

- The incidence of low back pain in adults is as high as 84%, and the most common cause of low back pain is lumbar disc herniation (ranking No. 1) and lumbar spinal stenosis (ranking No. 2).
- Dr. Zhao conducted systematic review of acupuncture and other non-surgical treatments for lumbar spinal stenosis, and intensive research on the treatment.
- Dr. Zhao used acupuncture, acupoint injection and massage (Treatment Group) to treat lumbar intervertebral disc herniation, compared with pure massage (Control Group), which significantly improve the treatment effectiveness.
- A clinical controlled trial of patients with lumbar disc herniation conducted during 2003 to 2005.

Clinical controlled trial result for patients with lumbar disc herniation

Table 1. Comparison of the clinical effects between the two groups (Case)

Group	N	Cure	Impro- vement		Total efficacy rate (%)
Treatment	50	44	5	1	98.0
Control	50	30	15	5	90.0

Note: A comparison between the treatment and control groups, U = 2.46, P < 0.05

Clinical controlled trial result for patients with lumbar disc herniation

Table 2. A comparison of the cure time between the two groups (Case)

Group	1 course of treatment	2 courses of treatment	3 courses of treatment
Treatment	23	18	3
Control	6	9	15

Note: A comparison between the treatment and control groups, $\chi^2 = 19$, P< 0.01

Research outcome published on National Medicine Journal

Clinical Observations on the Treatment of Lumbar Intervertebral Disc Protrusion by Acupuncture and Tuina

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摘要 目的:观察针刺、穴位注射配合推拿复位治疗腰椎间盘突出症的疗效。方法:先针刺,再穴位注射,最后推拿复位治疗,每日1次,6次为1个疗程。并与单纯推拿复位治疗对比。结果:治疗组在临床治疗有效率及相同时间治愈率方面均明显优于对照组。结论:针刺、穴位注射配合推拿复位的综合治疗方法,比单纯推拿复位治疗的疗效好,疗程短。

关键词 针刺疗法; 水针; 推拿; 椎间盘移位; 按摩

Abstract Objective: To investigate the efficacy of acupuncture and point injection in cooperation with Tuina and reposition for treating lumbar intervertebral disc protrusion. Methods: Treatment was given by first acupuncture, then point injection and last Tuina and reposition. It was administered once daily, 6 times as a course and compared with simple Tuina and reposition. Results: Both the effective rate in the clinical treatment and the cure rate in the same period were significantly higher in the treatment group than in the control group. Conclusion: A composite treatment by acupuncture and point injection in cooperation with Tuina and reposition is better in curative effect and shorter in the course of treatment than simple Tuina and reposition.

Key Words Acupuncture Therapy; Hydro-acupuncture; Tuina; Intervertebral disk Displacement; Massage

Research paper published

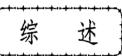
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Chinese Acupuncture and Moxibustion

Title:

Research Progress in the Treatment of Lumbar Spinal Stenosis with Acupuncture and Other Nonsurgical Therapies 中国针灸 2006 年增刊

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· 115 ·

针灸等非手术疗法治疗腰椎管狭窄症研究进展

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[摘 要] 目的:总结针灸、推拿及非手术方法治疗腰椎管狭窄症(LSS)的方法及疗效。探讨中医疗法治疗本病的现况及今后需要解决的问题。方法:收集整理近5年针灸、推拿及非手术疗法治疗LSS的文章,按照针刺、推拿、药物注射分为三大类,介绍各家治疗方法及疗效。结论:综合运用多种疗法是目前治疗LSS的主流;临床医生应注意非手术疗法治疗LSS有一定的适应证及禁忌症;疗效评定缺乏统一的标准影响了本病的诊疗及研究工作。

[主題词] 非手术疗法;腰椎管狭窄症/针灸疗法;综述

腰椎管狭窄症(lumbar spinal sternosis, LSS)是老年人腰腿痛常见病因之一,发病率仅次于腰椎间盘突出症,占椎管内疾病的第2位。退变性腰椎管狭窄症是指腰椎管、神经根

转 34 例,无效 3 例,总有效率达 96.4%。杨宏^[7]采用针灸为 主配合按摩治疗 32 例,除 1 例外,其他患者均治疗 1 次即见 效,方法是在平髂嵴的棘突进针刺激神经根,使患肢产生电

- Dr. Zhao systematically reviewed the clinical research on acupuncture for the treatment of pain syndrome during his master's by research study
- His research finding focus on treating pain syndromes with Houxi point
- More than 100 cases of various pain syndromes were treated with Houxi point, from which 68 patients on the treatment of acute lumbar sprain and stiff neck

More than 100 cases of various pain syndromes were treated with Houxi point, from which 68 patients on the treatment of acute lumbar sprain and stiff neck are summarized as follows

All cases come from totally 68 patients who visited the outpatient in Acupuncture and Massage Center of Beijing Hospital of Integrated Traditional Chinese and Western Medicine between September 2003 and August 2007, including 38 patients with acute lumbar sprain and 30 patients with stiff neck. The general information is shown in Table 1:

Table 1 General Information of Patients

Illness	Male (person)	Female (person)	Average Age	Average Course of Disease (days)
Acute Lumbar Sprain	28	10	38.4±5.3	1.5
Stiff Neck	16	14	40.6±6.5	1

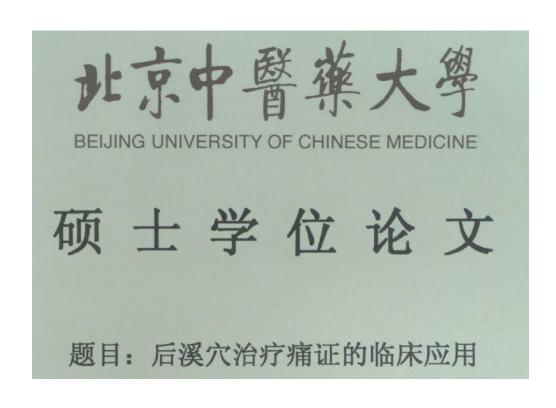
3.2 Treatment Effect

The treatment efficiency of acute lumbar sprain and stiff neck is 97.37% and 93.33%, respectively. Details are shown in Table 2.

Table 2 Treatment Efficiency (Person, %)

Illness	Cured	Improved	Unhealed
Acute Lumbar Sprain	33 (86.84)	4 (10.53%)	1 (2.63%)
Stiff Neck	25 (83.33%)	3 (10.00%)	2 (6.67%)

Dr. Zhao's research was published in his master's degree dissertation



Dissertation Title:

Clinical application of acupuncture at Houxi point for pain treatment

Explore methods of treating pain syndrome from ancient Chinese medicine books (2009 to 2012)

Summarized Heated moxibustion used to treat costal or gastric pain, dull pain in ileum, pain with cold sensation below low back, pain with heavy sensation in low back, headache, pain of feet, and pain of joints. Bloodletting used to treat pain, swelling, and pus in the larynx caused by tonsillitis, and teeth ache cause from inflammation in the root of teeth.

·230 ·

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TRADITIONAL MEDICINE

Heated Moxibustion and Bloodletting in Tibetan Medical Literature of Dunhuang Heritage

ZHAO Qi (赵 琪)¹, WU Mo-zheng (吴墨政)², and ZHAO Ji-ping (赵吉平)¹

ABSTRACT The paper introduces the heated moxibustion and bloodletting in Tibetan medical literature of Dunhuang Heritage. It proves that the external therapies in Tibetan medicine such as heated moxibustion and bloodletting are of very high level since the 8th century, which inspires current clinical practice. It also shows that the extensive exchange between Tibetan medicine and various kinds of medicine such as Chinese medicine promoted the development of Tibetan medicine.

KEYWORDS Dunhuang Heritage, Tibetan medicine, heated moxibustion, bloodletting

- It is found that NO is a specific substance of human qi and is closely related to the qi of the viscera and meridians.
- Through laboratory research on the levels of NO and 5-TH in the serum of migraine rats, it has been proved that bleeding method on jing-well points of three food-yang meridians is effective for migraine rats.

Table 1 Body Mass and Times of Scratching Head and Climbing Cage of Different Groups 0.5 h after Modeling

Group	Body Mass (g)	Times of Scratching Head and Climbing Cage
Control	264.20±12.27	0
Model	263.70±9.58	25.00±4.35
Western Medicine	265.08±13.42	24.20±5.37
Bleeding	261.60±16.72	25.50±6.22

Table 2 Comparison on Times of Scratching Head and Climbing Cage of Different Groups at Different Time Points ($x \pm s, n = 10$)

Group	0.5h after Modeling	0.5h after Intervention	1h after Intervention	1.5h after Intervention
Model	25.00±4.35	14.40±7.00	12.00±5.89	11.20±5.61
Western Medicine	24.20±5.37	13.90±3.81*	10.80±5.01	6.80±4.44 [△]
Bleeding	25.50±6.22	12.70±2.91*	5.30±4.85 ^A	2.20±2.74 [△] ♣

Note: by comparing with 0.5 h after modeling, *P < 0.05; and by comparing with the Model Group in the same period,

It has been proved that bleeding method on jing-well points of three food-yang meridians is effective for migraine rats through laboratory research on the levels of NO and 5-TH in the serum of migraine rats,

Table 3 Comparison on the Content of NO and 5-HT in Different Groups $(x \pm s, n = 10)$

Group	NO	5-NT
Control	0.1114±0.0116	485.40±23.24
Model	0.1748±0.0568**	442.80±32.35**
Western Medicine	0.1322±0.0095 [△]	480.88±22.34 [△]
Bleeding	0.1242±0.0105 [△]	481.11±44.45△

Note: By comparing with the Control Group, "P < 0.01; and by comparing with the Model Group,

 $^{^{\}triangle}P$ < 0.05, $^{\triangle}P$ < 0.01; and by comparing with the Western Medicine Group in the same period, $^{\blacktriangle}P$ < 0.05.

[△]P < 0.05, △△P < 0.01.</p>

The possible mechanism is: reducing the blood nitric oxide (NO) and improving the blood serotonin (5-HT).

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试论一氧化氮是人体气的一种具体物质

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[摘要] 将一氧化氮(NO)生物学作用和中医学中气的基本概念和主要生理功能对比分析后认为,NO即是属于中医学中人体的气的一种具体物质。这对气的实质的研究,以及与NO相关的中医、中西医结合研究,具有重要意义。

[关键词] 一氧化氮;中医学;人体气;物质

[中图分类号] R226 [文献标识码] A [文章编号] 1672-951X (2014) 03-0003-02

DOI:10.13862/j.cnki.cn43-1446/r.2014.03.002

Study on NO as a Kind of Specific Substances of Qi in the Human Body

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[Abstract] According to the comparative analysis on the basic concepts in biology and medicine and main physiological function of nitric oxide (NO) and Qi in TCM, NO is a kind of specific material belongs to the Qi of Chinese Medicine in the human body. The study on essence of this king of Qi and Chinese medicine as well as integrated traditional Chinese and Western medicine research associated with the NO has the vital significance.

[Key words] NO; TCM; Qi in the human body; Substances

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略论一氧化氮与脏腑经络之气的关系

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摘 要:一氧化氮(NO)属于中医学气的重要物质基础,人体的气、脏腑之气、经络之气均由元气所派生。脏腑之气如心主血脉、脾胃升降、肾主生长发育、肺主气、肝主疏泄;经络之气如穴位经气的激发、针灸疗病和保健、以及太极拳、气功运气,均与NO密切相关。

关键词:一氧化氮;中医学;脏腑之气;经络之气

中图分类号:R223 文献标志码:A 文章编号:1000-1719(2014)11-2309-03

Brief View on Nitric Oxide's Relationship with Qi of Meridians and Zangfu Organs

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Abstract: Nitric oxide (NO) is an important substance of Qi. Qi in the human body, Qi of Zangfu organs and Qi of meridians are all originated from primordial Qi. Qi of Zangfu organs, such as: heart dominating blood circulation and vessels, spleen and stomach ascending and descending; kidney governing growth and development; lung governing Qi; liver controlling conveyance and dispersion. Qi of meridians includes stimulation of channel – Qi, acupuncture treatment of diseases and health care. Besides, there are also Tai Chi and Chi gong. All these have close relationship with NO.

Key words: nitric oxide (NO); traditional Chinese medicine; Qi of Zangfu organs; Qi of meridians

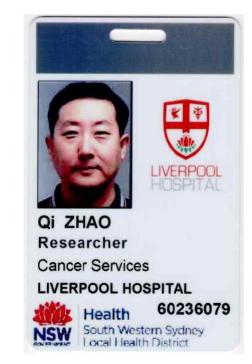
- In 2020, approximately 145,000 patients are diagnosed with cancer in Australia; 19.3 million new cancer cases worldwide
- More than 70% of cancer patients are tortured by pain, and 50% of cancer pain has not been effectively controlled.
- The three-step analgesic principle proposed by the World Health Organization is currently facing severe challenges from the addiction and side effects of analgesic drugs, Including constipation, nausea, drowsiness, confusion, hallucinations, dependence, etc.
- Acupuncture therapy has a unique clinical effect in relieving cancer pain with high safety.
- Acupuncture and moxibustion provide a new research method for treating cancer pain.

Project Background

- Western Sydney University, Beijing University of Chinese Medicine and South Western Sydney Local Health District jointly established the first integrated Chinese and Western medicine oncology alliance in 2018.
- Australia-China Chinese Medicine Center is to explore the model of integrated tumor treatment in Australia, that is, to integrate the advantages of traditional Chinese medicine and acupuncture to provide better treatment and recovery opportunities for cancer patients.
- Jointly seek a new model of integrated Chinese and Western medicine treatment of tumors that can be carried out in Australian public hospitals, and further explore the scientific mechanism of Chinese medicine to treat tumors.

Project Background

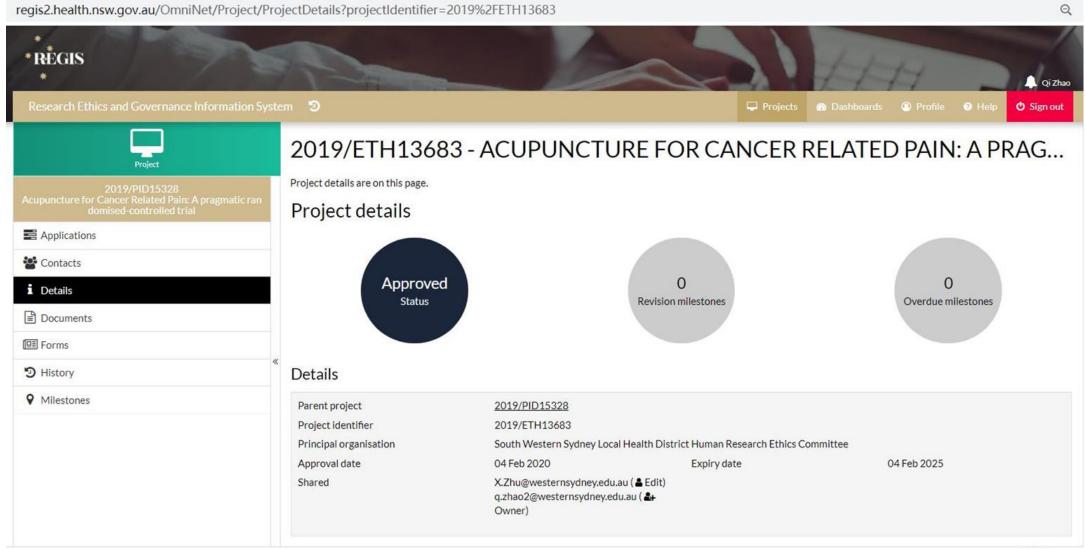
- As the pain specialist, Dr ZHAO Qi is appointed as the Co-Director in Chinese Medicine Center of Western Sydney University
- Dr ZHAO Qi works as the principal investigator, in charge of the research project
- He leads a team working towards building an evidence base for cancer pain treatments to Australia
- Supported by Western Sydney University, Liverpool Hospital and South Western Sydney Local Health District



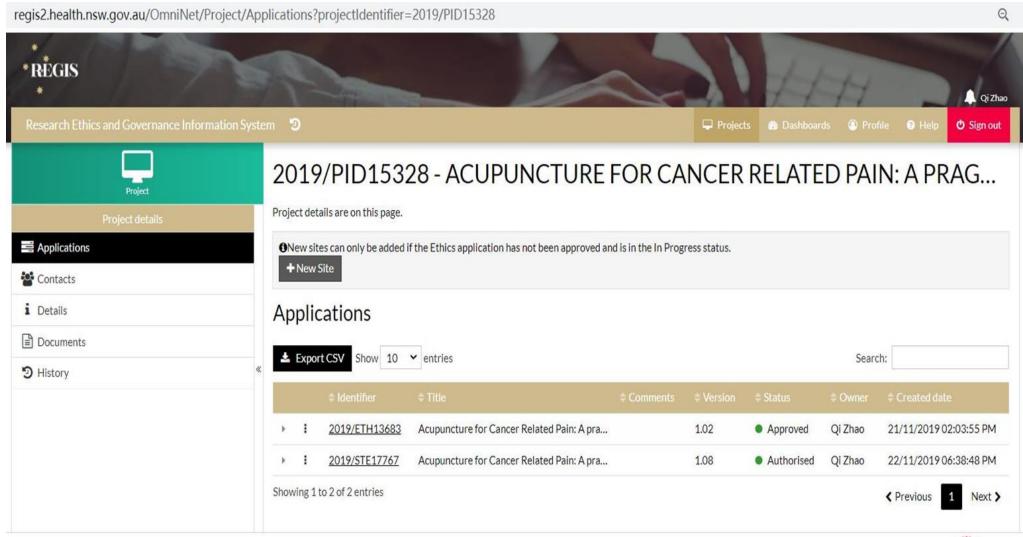


Project Progress

- Start from 2017
- Numerous interviews with Western medical experts and ethics committees
- Revise the clinical research draft repeatedly
- A clinical study titled "Acupuncture for cancer-related pain: a pragmatic randomizedcontrolled trial" passed the Australian clinical trial ethics certification on Feb 2020
- Acupuncture treatment at Liverpool Hospital approved on Jun 2020
- The protocol of the trial was published in Dec 2020.
- The research is currently underway, and the Pain level (by Numerical Rating Scale) of the patients under treatment has decreased significantly.









CONSORT flow diagram

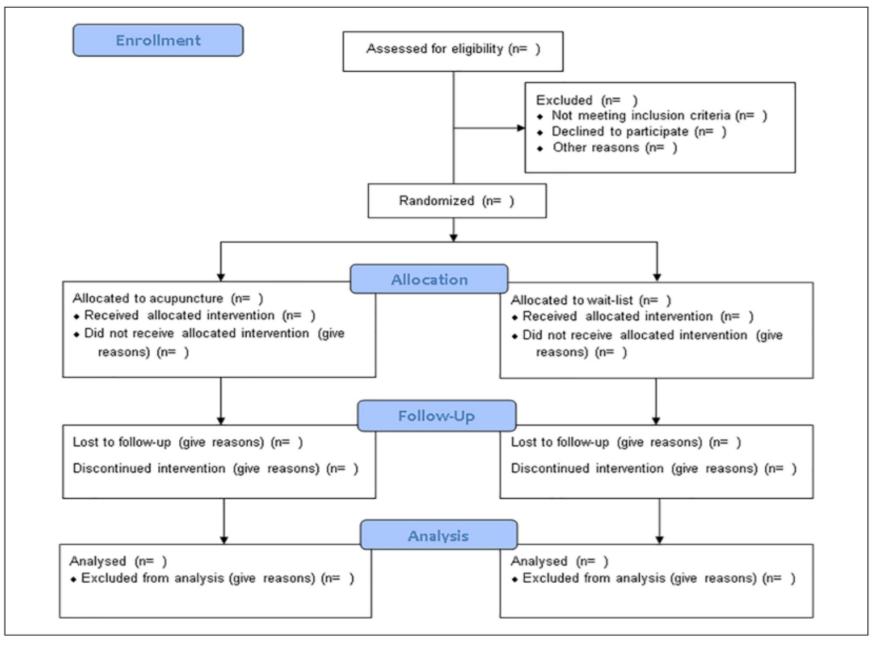


Figure 1. CONSORT flow diagram of the study.

Trial procedures

Table 1. Trial Procedures.

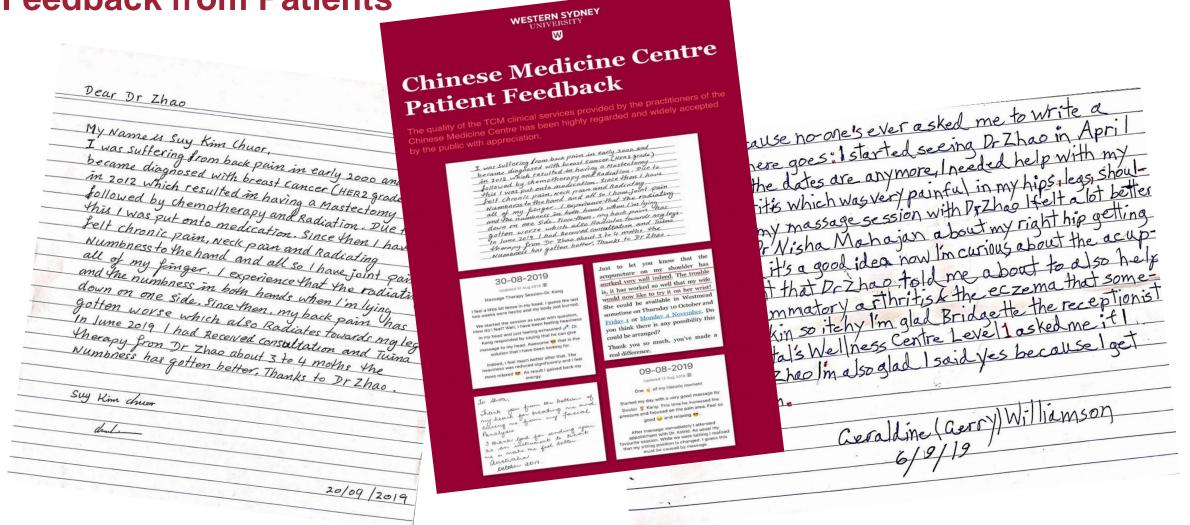
Time point		Week I		We	ek 2	We	ek 3	We	ek 4	Week 8
Visit number	Vt I BI	Vt I Al	Vt 2	Vt 3	Vt 4	Vt 5	Vt 6	Vt 7	Vt 8	Vt 9
Screening	X									
Informed consent	X									
Sociodemographics	X									
Assessment										
NRS	X	X	X	Χ	X	X	X	X	X	Χ
Analgesic use	X		X		X		X		X	Χ
Auricular acupressure frequency			X	Χ	X	X	X	X	X	
Adverse events		X	X	Χ	X	X	X	X	X	
CEQ	X									
Interview									Χ	
Intervention	7	X	Χ	Χ	Χ	Χ	Χ	Χ	Χ	

Abbreviations: Vt, visit; Bl, before intervention; Al, after intervention.

The outcome is promising, the average NRS reduced 3.9 so far

	А	В	С	D	E	F
1	Randomisation ID	Groups	Prescreening NRS	Visit 1 NRS	Visit 8 NRS	Follow up NRS
2	2AEH	В	5	9	8	8
3	3TSM	Α	6	6	2	3
4	SKC5	Α	7	7	2	4
5	4SPI	Α	6	6	-	-
6	CM6	В	8	8	0	1
7	GW8	А	5	5	1	2
8	EMU7	В	6	7	5	5
9	NR9	Α	9	9	4	4
10	FH10	Α	9	9	4	6
11	CAT11	В	6	6	3	4
12	GER12	В	6	8	5	7
13	NAS13	Α	5	5	1	2
14	VS14	В	6	6	4	3
15	JB15	В	5	6	2	2
16	LDH16	Α	8	8	3	6
17	FJ17	В	8	8	4	-
18	AW18	А	9	9	-	-
19	KS19	В	9	9		
20	RA20	А	9	9	3	
21	AC21	А	7	7		
22	QZ22	В	5			
23	GV23	А	8	8		
24	LW24	В	10			
25	EA25	А	8			

Feedback from Patients



Progress – Ongoing Projects

Dr. Eugene Moylan, Director of the Oncology Department of Liverpool Hospital, shared the story of this Chinese and Western Medicine cooperation



Study Protocol

Acupuncture for Cancer Related Pain: Protocol for a Pragmatic Randomised Wait-List Controlled Trial

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Abstract

Background: Acupuncture has been proved effective for cancer related pain (CRP) in China, America and some other countries. However, there is relative lack of evidence to support the use of acupuncture for CRP in Australia. **Objectives:** To assess the effectiveness and safety of acupuncture for management of CRP in a real-world setting and to understand cancer patients' experience of undergoing acupuncture for CRP. **Methods:** A pragmatic randomised controlled trial will be conducted in South Western Sydney Local Health District (SWSLHD) in NSW, Australia. Adults with cancer related pain (n=106) will be randomised in a 1:1 ratio to receive the acupuncture intervention up front versus after a wait list period of 4weeks. Pain level (by Numerical Rating Scale), analgesic use, auricular acupressure frequency and adverse events will be assessed at baseline, mid-treatment and post-treatment. Expectancy on trial outcome (by Credibility and Expectancy questionnaire) will be assessed at baseline. The perspective of the participants (by an interview) will be recorded after the last intervention. **Expected outcomes:** We hypothesise that acupuncture will relieve cancer related pain at mid-treatment and post-treatment. We also hypothesise that few adverse events will be provoked by acupuncture. **Trial registration:** Australia New-Zealand Clinical Trial Registry (ACTRN12620000325909).

Keywords

acupuncture, cancer related pain, pragmatic, clinical trial, complementary and alternative medicine

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Set up Zhao Acupuncture Clinic (2023 – present)



Zhao Acupuncture clinic affiliated to Jarher Senior Center serving the Washington DC and Maryland state.

We offer high-quality services including acupuncture, massage, cupping, moxibustion and dietary therapy.