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Global Views

Discussions on real-world acupuncture treatments for chronic low-back pain in older adults

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ABSTRACT

Chronic low-back pain (CLBP) is one of the most common pain conditions. Current clinical guidelines for low-back pain recommend acupuncture for CLBP. However, there are very few high-quality acupuncture studies on CLBP in older adults. Clinical acupuncture experts in the American Traditional Chinese Medicine Association (ATCMA) were interested in the recent grant on CLBP research announced by the National Center for Complementary and Integrative Health. The ATCMA experts held an online discussion on the subject of real-world acupuncture treatments for CLBP in older adults. Seven participants, each with more than 20 years of acupuncture practice, discussed their own unique clinical experience while another participant talked about the potential mechanism of acupuncture in pain management. As a result of the discussion, a picture of a similar treatment strategy emerged across the participants for CLBP in older adults. This discussion shows that acupuncture may have complicated mechanisms in pain management, yet it is effective for the treatment of chronic pain involving maladaptive neuroplasticity; therefore, it should be effective for CLBP in older adults.

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1. Introduction

Chronic low-back pain (CLBP) is defined by National Institutes of Health (NIH) as pain at the low back that persists for 12 weeks (3 months) or longer, even after an initial injury or underlying cause of acute low-back pain has been treated. About 20% of people affected by acute low-back pain develop CLBP with persistent symptoms at 1 year [1]. In 2017, the American College of Physicians' clinical guidelines for low-back pain recommended acupuncture for CLBP [2]. However, there were very few high-quality acupuncture studies on CLBP in older adults [3–5]. The National Center for Complementary and Integrative Health (NCCIH) recently announced a funding opportunity for managing CLBP in older adults [6], which encouraged real-world acupuncture clinical trials for both genders and multiple racial groups. As of 2018, there were about 38,000 licensed acupuncturists in the United State [7,8]; low-back pain is one of the most common conditions treated in an acupuncturist's daily schedule [9]. Clinical acupuncture experts in the American Traditional Chinese Medicine Association (ATCMA) were interested in the NCCIH grant and held an online

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discussion, using WeChat (Tencent, China), on the subject of real-world acupuncture treatments for CLBP in older adults, from December 20 to December 27, 2018. We would like to share the discussion with readers. All discussion participants received degrees from Chinese Medicine or Integrative Medicine programs in China, lasting 5 years or more, and individually have more than 20 years of acupuncture practice.

2. Discussion by acupuncturists

2.1. Participant 1: Arthur Yin Fan, MD, PhD, LAc

Chair of ATCMA Research Committee; NIH fellow in traditional Chinese medicine (TCM); was a neurologist for 10 years in an university hospital in China; with 33 years of experience in acupuncture and research, including at Georgetown University and the University of Maryland.

Welcome everyone and thanks for discussing your real-world acupuncture experience in managing CLBP in older adults. CLBP is a common illness or disorder in a licensed acupuncturist's daily practice. Based on my own practice, CLBP has accounted for about 12% of patient visits in recent years. Most CLBP patients who come to my clinic are older adults. First, let's talk about inclusion and exclusion criteria for CLBP in older adults. Due to variations of these criteria in published literature, Report of the NIH Task Force on research standards for CLBP [10] should be followed.

2.1.1. The inclusion criteria of CLBP in older adults

Age: 65–80 years old. CLBP is defined as a back pain problem that has persisted for at least 3 months or has resulted in pain on at least half the days in the past 6 months [9]. A minimum pain intensity score of 4 out of 10 on a visual analog scale (0 = no pain, 10 = most severe pain); ability of the participant to fully understand the trial procedure and the risks involved, communicate with the examiner, and comply with the protocol; provision of written informed consent for participation [1,3–5].

2.1.2. The exclusion criteria of CLBP in older adults

Age: younger than 65, or older than 80 years. Pain mainly at legs; a history of spinal surgery; hip osteoarthritis; progressive neurological deficit or severe psychiatric or psychological disorders; serious spinal disorders, such as metastatic cancer, vertebral fracture, spinal infection, and inflammatory spondylitis; other contraindications for treatment, such as clotting disorders, use of anticoagulants or chemotherapy medications, and seizure disorders; presence of a device that could be affected by electromagnetic fields, such as a pacemaker; use of medications that could affect the trial results, such as corticosteroids and anticonvulsants, within the last week; participation in other clinical trials; ineligibility judged by a researcher [1,3–5].

2.1.3. My own real-world acupuncture strategy for CLBP in older adults

2.1.3.1. Acupuncture points (acupoints) or locations. I use local points, in or near pain area, plus distant points. The local acupoints include Shenshu (BL23), Qihaishu (BL24), Dachangshu (BL25), and Guanyuanshu (BL26). These four pairs of points are located beside the L2–L5 spinal nerve foramen, while the CLBP may be related to L3–L5 nerves, erector spinae and associated fascia. I also use Yaoyan (EX-B-7). If the pain point (also called "tender point," "Ashi point" or "trigger point") is not located exactly at a traditional point location, I consider the use of the tender point, instead of traditional point locations. If there are pain points (Ashi or trigger points) at gluteal muscles or the sacroiliac joint, I add local points there as well. In clinical practice, I use 8–10 needles for these acupoints. The distant acupoints include Zusanli (ST36), Weizhong (BL40), Yanglingquan (GB34), Fengshi (GB31), and Sanyinjiao (SP6). I use up to 3 pairs of distal acupoints.

2.1.3.2. Needle sizes and needling technique. I use 1.5–2.0 cun (40–50 mm), 30 or 32 gauge (G; 0.30 or 0.25 mm in diameter) filiform acupuncture needles. Occasionally, I use 3.0 cun (75 mm), G30 needles for the gluteal muscle area (Cloud & Dragon, LEKON or EXPERT Traditional Acu Needles, manufactured and distributed by C.A.I. Corporation, USA). I prefer to treat patients in the prone position, inserting needles vertically (or slightly obliquely to the spinal foramen) about 1–1.5 cun (40–50 mm) deep, depending on patient size.

2.1.3.3. Inducing Deqi or not. I use light Deqi technique [11]. That is, after inserting the needles, patients will feel some pressure or soreness at the local soft tissue area; at the same time, the acupuncturist will feel a pulling or pressure sensation from the inserted needle. Generally, I do not use electric acupuncture for older adults with CLBP, due to the fact that such patients may have deficiency conditions. But I use an infrared lamp to treat the low-back area during the acupuncture session. The acupuncture treatment lasts 45 min. After that, I use light- to moderate-force suction cupping at the low-back pain area for 3–5 min.

2.1.3.4. Treatment duration. Ideal treatment frequency or duration is 16–24 sessions: twice a week for 8–10 weeks, then once a week for 4 weeks, if possible. Most senior patients only have Medicare insurance, and in some cases, supplemental insurance; Medicare and supplemental insurance generally do not cover acupuncture. In the real world, senior CLBP patients have to pay out-of-pocket (I give them some discount). My senior patients with CLBP may only choose to pay for 8–10 sessions, which may limit acupuncture's effectiveness.

One characteristic of CLBP in senior patients is that it may be due to a deficiency condition ("kidney deficiency" or "qi-blood deficiency"), which makes CLBP in seniors more difficult to treat than in younger adults. For this reason, one strategy of mine is using tonifying or strengthening acupoints: BL23, ST36, SP6, etc. Another strategy is to encourage patients to get more acupuncture sessions, such as 16–20 sessions, or say, after extensive treatments, then to get some tuning up sessions. In my practice, I add Shenting (GV24), Yintang or ear Shenmen to calm patients' spirit, and help get a quicker effect in treating the older adults' CLBP.

2.2. Participant 2: Hui Ouyang, MD, DC, LAc

Codirector of ATCMA Academic Committee of TCM Orthopedics and Physical Medicine and Rehabilitation.

2.2.1. The predominant population

Most patients with CLBP have had low-back pain lasting 3 months or longer. As the prevalence of chronic conditions increases with age, adults aged of 65 or greater, with CLBP, will be likely to have comorbid conditions and require more healthcare service, so they must be careful of adverse drug reactions, declining functional status and mortality.

2.2.2. Needling method

Letting patients lie in prone position, I prefer to use 1.5–2 cun (40–50 mm), G30–32 (0.25–0.30 mm in diameter) needles, due to the relatively large American body size. After needles have been inserted in the acupoints bilaterally, I manipulate the needles until both patients and providers feel Deqi sensation [11]. Then the needles are retained for an additional 30 min before removing. I generally do not use electric acupuncture, infrared or cupping.

For improving the treatment effectiveness of CLBP in older adults, I may add exercise or simplified spinal manipulation. Based on my experience, acupuncture is effective for about 70% of CLBP in older adults, although for 30% of these patients it may be ineffective. With the addition of manipulation and exercise, the effectiveness might be close to 95%.

2.2.3. My personal acupuncture prescription

Huatuo Jiaji lumbar 3–5 (EX-B-2, L3–L5), BL24, BL25, and BL26; Yaoyangguan (GV3), Shiqi Zhuixia (Ex point, between L5 and S1 vertebrae, middle line), and Ciliao (BL32); Zhibian (BL54), and Huantiao (GB30).

In cases where a patient has leg pain, I may add: Chengfu (BL36), Yinmen (BL37), GB34, Juegu (GB39), Qiuxu (GB40), and Zulinqi (GB41); BL40, Chengshan (BL57), Kunlun (BL60), and Shenmai (BL62).

Selected acupoints and needling methods may be adjusted based on patients' actual clinical manifestations and their responses to previous acupuncture treatments. So, different patients may be treated differently to some extent, and even the same patient may get different treatments during different sessions.

2.3. Participant 3: David Dehui Wang, MD, MMS, PhD, Lic. OM

Director of ATCMA Academic Committee of TCM Internal Medicine; clinical assistant professor and lead acupuncturist in the Ohio State Integrative Medicine Clinic, Ohio State University, Columbus, OH, USA; was trained in rheumatology in China.

CLBP may include many different conditions related to spinal bones, discs, joints, and muscles although its major symptom is low-back pain for more than three months. The pain may be on one side or on both sides. The condition may include several disorders, such as post lumbar area acute sprain, chronic lumbar muscle strain, disc herniation, lumbar spinal stenosis, degenerative spinal arthritis, ankylosing spondylitis, spinal osteoporosis, supraspinous ligament and interspinous ligament injury, lumbar facet joint synovial incarceration, the third lumbar transverse process syndrome, lumbosacral sulcus, lumbar sacralization, and sacral lumbarization. Generally speaking, acupuncture has very good results in treating CLBP in seniors. My principle is mainly using local acupoints, including lumbar EX-B-2 and Ashi (or trigger) points, although I may also add distant acupoints sometimes. I prefer using electroacupuncture, plus infrared and sometimes also using cupping and exercise.

2.3.1. Acupoints

I prefer using major acupoints in local area, such as BL23, EX-B-2, and Ashi points, plus distant acupoint BL40.

2.3.1.1. Acupoint prescription adjustments based on TCM pattern differentiation. (1) If patient has cold-dampness pattern, add acupoints GV3, Yinlingquan (SP9) or ST36. (2) If patient has dampness-heat pattern (rare to see), add SP9. (3) If patient has kidney deficiency, add Taixi (KI3) and Zhishi (BL52) for kidney yin deficiency, and Minmen (GV4), GV3 or Guanyuan (CV4) for kidney yang deficiency. (4) If patient has blood stasis pattern, add Geshu (BL17) and GB34; if stagnation due to injury, add Yaotongxue (EX) and Shuigou (GV26).

2.3.1.2. Acupoint prescription adjustments based on disorders/diseases. (1) If patient has signs and symptoms for chronic lumbar muscle strain, add EX-B-7, BL25 and BL26. (2) If patient has lumbar disc herniation, focus on three pairs of EX-B-2, one pair on the same segment and other two pairs of Jiaji acupoints both above and below the hernia segment. (3) If patient has lumbar degeneration, focus on EX-B-2 and GV3. (4) If patient has ankylosing spondylitis, focus on EX-B-2 and GB34. (5) If patient has lumbar spinal stenosis, focus on EX-B-2. (6) If patient has the third lumbar transverse process syndrome, focus on EX-B-2. (7) If patient also has sciatica, add GB30, BL36, BL37, GB34, GB39, and BL60.

I also use ear acupoints sometime, for example, using Lumbar or Lumboscral zone and Shenmen.

2.3.2. Treatment protocol

2.3.2.1. Needles and devices. Filiform needles: 1–1.5 cun (30–40 mm), G34 (0.22 mm in diameter), Spirit brand; 2.0 cun (50 mm), G32 (0.25 mm in diameter), Spirit brand; 3.0 cun (75 mm), G30 (0.30 mm in diameter), AcuTek brand. Electroacupuncture stimulator: Nissan ITO ES-160. Cupping set: Dong Bang, made in Korean. Alcohol: swab with 70% alcohol. Infrared lamp: TDP CQ-27, made in China.

2.3.2.2. Procedure. Insert needles first (using both body acupuncture and auricular acupuncture), then add electricity stimulation. For auricular acupuncture, using 1 cun (30 mm), G34 (0.22 mm in diameter) needles; for body acupuncture, using 1.5 cun (40 mm), G34, or 2 cun (50 mm), G32 (0.25 mm in diameter), or 3 cun (75 mm), G30 (0.30 mm in diameter) needles. For ear area, needling 2–3 mm; for lumbar area, needling vertically 1–1.5 cun (30–40 mm); for EX-B-2, needling obliquely to the spinal midline with an angle of 10–15 degrees to the skin; for the acupoints on the Governor Vessel (spinal midline), needling obliquely up with an angle of 15 degrees to the skin, 0.5–1.0 cun (13–30 mm); for GB30, needling vertically 2.0–3.0 cun (50–75 mm); for the acupoints on legs, needling vertically 1.0–1.5 cun (30–40 mm). For patients' comfort, I prefer using even needle stimulation (no tonic, no drain). The electric stimulation parameters: using continuous wave (30 Hz) and sparse-dense wave (10–30 Hz), alternately. Needles are kept in for 30 min; infrared lamp is also applied while the needles are in. After acupuncture, use cupping for 10 min. If patient is too weak, this step can be omitted.

2.3.3. Treatment course

I recommend a minimum of 10 sessions as a course of treatment, basically, twice a week. Commonly, I suggest patients do 3–5 sessions of acupuncture at the beginning; when a patient starts seeing some improvements, then I start to discuss next set of treatments with the patient. Most patients have to pay acupuncture expense out-of-pocket; if I tell them "you have to get 10 or more treatments" at the beginning, patients may decide that they are more concerned about the cost than their back pain, and they may not follow my treatment plan or may stop coming for acupuncture.

2.3.4. Precautions

(1) CLBP in seniors may have many causes; if possible, a clear diagnosis is recommended. (2) Acupuncture for CLBP may have good results; however, the original disorder/disease should be treated as well. (3) For seniors and weak individuals, the first acupuncture treatment should be gentle to avoid strong stimulation. (4) For seniors and weak individuals, let them rest a while after removing needles, before they go home. (5) Suggest patients avoid carrying stuff more than 15 lb (6.8 kg) and try to sit in a chair with a backrest and armrests. (6) Suggest patients sleep on a firmer mattress. During treatments, patients should get enough rest and keep the back area warm. Even more, I suggest that patients use a back brace to help protect their back. (7) Suggest patients do gentle back exercise to help recover back flexibility and muscle strength. Suggest they avoid sitting or standing for too long at a time. (8) Tell patients not to worry about pain after treatment; some patients' back pain may get worse after acupuncture. This

may last for about 48 h. (9) For senior CLBP, patients may use some dietary supplements, such as calcium and some Chinese herbal medicines.

2.4. Participant 4: Hui Wei, MD, AP

Chief executive officer of ATCMA, with extensive experience in integrative medicine.

I prefer to use 1.0–1.5 cun (30–40 mm), G34 (0.22 mm in diameter) filiform acupuncture needles, focusing on EX-B-2 at the low back, or tender points (Ashi or trigger points).

A pair of points I use often is GV3 and Jizhong (GV6), which I learned from a senior doctor. BL23, BL25, Baihui (GV20), BL54, BL40, GB34 may also be chosen based on patient's pain location. Electro-acupuncture is also applied to one pair of acupoints at the lower back. An infrared lamp focused on the area of low-back pain is useful during acupuncture. I always suggest that patients apply *Honghua You* (Red Flower Oil) on skin and use a heating pad at the pain area.

2.5. Participant 5: Xinru Qian, MD, certified MD acupuncturist

Board certified specialist in physical medicine and rehabilitation, director of ATCMA Academic Committee of TCM Orthopedics and Physical Medicine and Rehabilitation.

I always diagnose first and treat the underlying mechanism.

2.5.1. General protocol

Generally, I use 1–3 bilateral pairs of acupoints from L1-S2 EX-B-2. I prefer manual needle stimulation using 2.5–3.0 cun (60–75 mm), G30 (0.30 mm in diameter) needles, as well as 1–2 pairs of Shu points at lumbosacral areas with electric stimulation, using 1.2–1.5 cun (35–40 mm), G32–34 needles for 20–30 min.

For back pain at midline: avoid needling the local pain spot, instead use sensitive or common acupoints on the Du (GV) and Ren (CV) meridians.

For improving lumbar function I use Yaotongxue (EX), Shousanli (LI10), and Houxi (SI3), while the patient activates the lumbar region or walks around.

2.5.2. Add following treatment for related diagnoses

2.5.2.1. Generalized pain including CLBP. (1) With fibromyalgia: Ashi points, 4 gates (LI4 plus LV3), Dazhui (GV14), Yintang, Cervical Jiaji. (2) With an emotional component, may use GV20, Yintang, etc. (3) Rheumatology related pain: add GV14, Hegu (LI4), and Quchi (LI11). (4) Generalized degeneration: treat affected lower extremity joints and related soft tissue problems.

2.5.2.2. CLBP caused by spondylosis. (1) With spondylitis: use needling at anti-inflammation acupoints, such as GV14, LI4, and EX-B-2. (2) Spondylolysis and spondylolisthesis: it is more important to focus on modified posture and activity. (3) With radiculopathy: use needling acupoints at the same nerve distribution.

2.5.2.3. CLBP caused by spinal stenosis. (1) As spondylosis: add walker/rollator for activity; patient education, including avoiding frequent lumbar extension, abdominal muscle strengthening exercise, etc. (2) With constant radiculopathy: use needling at related acupoints, as discussed above.

2.5.2.4. CLBP caused by soft tissue degeneration. (1) Fasica: find a pattern to release the tight area, add special manipulation such as twisting, stucking, etc., and treat the Ashi points. (2) Muscle: for myofascial pain with trigger points or chronic muscle strain with degeneration, Ashi points and trigger points for specific muscles could be chosen for manipulation.

2.6. Participant 6: Deguang He, MD, MMS, LAc

Director of ATCMA Medical Qi Gong & Tai Ji Committee, assistant professor of New England School of Acupuncture.

2.6.1. Acupoints and needle sizes

(1) Ashi points, BL23, BL24, BL25, EX-B-7, and BL40; filiform acupuncture needles, 1.5 cun (50 mm), G34 (0.22 mm in diameter). (2) SI3; filiform acupuncture needle, 0.5 cun (15 mm), G36 (0.20 mm in diameter). (3) GB30; filiform acupuncture needle, 3.0 cun (75 mm), G32 (0.25 mm in diameter) for buttock or leg pain.

2.6.2. Inducing Deqi or not

Deqi [11] should be induced.

2.6.3. Others

During acupuncture treatment (30–40 min), add infrared lamp (also called TDP lamp). If CLBP does not get better after three sessions of acupuncture, add electric stimulation. My acupuncture strategy focuses on needling the acupoints in the local pain area, plus acupoints identified by TCM pattern differentiation. Patients with CLBP generally have weakness, so consider adding simplified Qigong exercises for improving the patients' constitution.

2.7. Participant 7: Haihe Tian, MD, PhD, AP

President of ATCMA, with extensive experience in integrative medicine.

My treatment strategy is to focus on the local EX-B-2 or positive reacting points (Ashi points). If the pain is more lateral, then use BL23, BL24, BL25, EX-B-7, BL40 and BL60. For these acupoints, I use G34 (0.22 mm in diameter), 1–1.5 cun (40–50 mm) filiform acupuncture needles. I also treat SI3, Linggu (Master Tung's point), and Dabai (Master Tung's point). For these acupoints, I use G36 (0.20 mm in diameter), 1.0 cun (40 mm) filiform acupuncture needles. I always induce Deqi [11] and retain the needles for 20–30 min. I also use an infrared (or TDP) lamp during the acupuncture session. Sometimes I add electricity for increasing stimulation. Commonly, I use moving cupping after acupuncture.

2.8. Participant 8: Changzhen Gong, PhD

Director of ATCMA Educational Committee, president of American Academy of Acupuncture & Oriental Medicine.

I will talk about the acupuncture mechanism in pain management.

Over the last 50 years, scientific research has developed and confirmed convincing nerve system explanations describing how acupuncture produces its analgesic effects. Neuroscience has identified two main pathways (the spinothalamic tract and the spinoreticular tract) in the central nervous system that carries nociceptive signals to higher centers in the brain. Following these pathways, nociception moves from the spinal cord through the medulla, pons, and midbrain, and terminates in the thalamus. The spinothalamic tract transmits nociceptive signals that are important for pain localization. The spinoreticular tract is involved in the emotional aspects of pain. Acupuncture blocks pain impulses by exciting receptors or nerve fibers, precipitating interactions with neurotransmitters or neuropeptides along each stage of the pathways. Acupuncture can mobilize enkephalin and dynorphin to block incoming pain messages in the spinal cord. Acupuncture inhibits spinal cord pain transmission through its synergistic effects on monoamines, serotonin and norepinephrine in the midbrain. Acupuncture can increase the release of β endorphin into the blood from the pituitary gland and affect the chemistry of cere-

brospinal fluid from the hypothalamus to cause analgesia. This multiple level and multiple center integration process demonstrates that acupuncture needling provokes subtle and complex effects in the autonomic nervous system to accomplish the mission of pain control [12,13].

3. Summary by Arthur Yin Fan, MD, PhD, LAc

In real-world acupuncture practice for CLBP in older adults, practitioners have their own unique clinical experience. However, generally speaking, the clinician's acupuncture strategy focuses on three aspects. (1) Acupuncture treatments generally are focused on a patient's low-back pain area, with major acupoints selected proximal to the pain; we call such pain-affected areas "Ashi zones", or tender areas, i.e., EX-B-2, Shu points (such as BL23–BL26) or other reacting points, called Ashi points, or trigger points, within the L1 to S4 nerve distribution region. Careful identification of the Ashi points and zones, and the pain referral patterns in the low-back area, is an important step for developing appropriate needling strategy. Most of the discussion participants also use distal acupoints, such as BL40, BL60, etc. on the legs. Such acupoints on the bladder meridian are related to low-back pain and have been used for the treatment of low-back pain for thousands of years. Participants also report using experience-based acupoints SI3 and Yaotongxue (EX) on the hands. (2) Practitioners also focus on improving the patients' body constitution and mental condition, or "patterns of disharmony." This may help recovery of CLBP to be more efficient. (3) Practitioners provide a combination of the above strategies, treating a patients' local pathology related to CLBP (see Table 1). Combining these strategies, as appropriate to manage CLBP in older adults, may provide the greatest effectiveness. However, it should be noted that, in real-world acupuncture practice, there are still more styles of acupuncture therapy beyond the Chinese acupuncture style discussed above. Many American acupuncturists use Japanese style acupuncture, in which much smaller gauge (such as G40–44, i.e., 0.12–0.16 mm in diameter) and shorter needles (such as 15 mm) are used, and the insertion is very gentle [14]. There are very few published clinical trials that have used this style of acupuncture in CLBP. The mechanism of acupuncture may be very complicated and has several theories and hypotheses in addition to those introduced above by Dr. Gong, including that acupuncture triggers the body's homeostasis through reflexology [15]. CLBP is not only a back pain issue, and patients with CLBP often have associated mental issues. These may include altered emotion and cognition [16], as confirmed by functional magnetic resonance imaging; these associated conditions support our acupuncture treatment strategy of adding mental calming points, such as Shenmen (HT7, or auricular), GV24, GV20, Yintang, etc. Acupuncture may have complicated mechanisms in pain management, yet it is effective for the treatment of chronic pain involving maladaptive neuroplasticity [17,18]; therefore, it should be effective for CLBP in older adults.

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Competing interests

The authors declare that they have no competing interests.

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Table 1
Summary of each doctor's real-world acupuncture practice on CLBP in older adults.

Acupuncturist	Acupuncture methods					Adjunctive therapies		Special notes
	Needle Sizes	Local points at back	Distal points	Deqi	EA	Infrared lamp	Cupping	
Fan	G30–32, 40–75 mm	Yes (Jiaji, Shu, Ashi) L2–L5	Yes (legs)	Yes		Yes	Yes	Tonification; calming-Shen
Ouyang	G30–32, 40–60 mm	Yes (Jiaji, Shu, Ashi) L3–S4	Yes (legs)	Yes				Chiro; exercise; individualized
Wang	G30–34, 30–75 mm	Yes (Jiaji, Shu, Ashi) L2–L5	Yes (legs)		Yes	Yes	Yes	Pattern & disease/disorder differentiation
Wei	G34, 30–40 mm	Yes (Jiaji, Shu, Ashi) L2–S4	Yes (legs)		Yes	Yes		Calming-Shen; GV3–GV6 EA; using red-flower oil
Qian	G30–34, 30–75 mm	Yes (Jiaji, Shu, Ashi) L2–S2	Yes (hands, legs)		Yes			Calming-Shen; disease/disorder differentiation
He	G32–36, 15–75 mm	Yes (Shu, Ashi) L2–L5	Yes (hands, legs)	Yes	Sometimes	Yes		Pattern differentiation; Qigong
Tian	G36–34, 30–40 mm	Yes (Jiaji, Shu, Ashi) L2–L5	Yes (hands, legs)	Yes	Sometimes	Yes	Yes	Tung's points; moving cupping

Note: Empty area mean "Not mentioned" or "No". CLBP: chronic low-back pain; EA: electro-acupuncture.

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