Editorial

What have we learnt from acupuncture research of fibromyalgia?

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What is fibromyalgia and why is it difficult to treat?

Fibromyalgia (FM) is characterised by widespread chronic pain in muscles and joints. About 1.75% of the population is affected by it with the majority being females (1). This condition is not satisfactorily managed as no specific causes or pathology have been identified. The widespread pain in FM is understood to be associated with central sensitisation, which is also used to explain other common symptoms in FM, including irritable bowel, irritable bladder, and headache (2,3). Other symptoms in FM, such as fatigue, poor cognition and unrefreshed sleep are not readily explained by central sensitisation. Those symptoms exacerbate the impact of pain and mood disturbance.

What can Chinese medicine do for FM?

FM is not a single entity. In the Western medical literature, subgroups of FM are based on variations in pain and mood disturbance (4). In addition to multiple sites of pain, impairments of cognition, fatigue, and sleep, the 2010 FM diagnostic criteria by the American College of Rheumatology (5) outline 41 other non-painful symptoms. Those non-painful symptoms have not been taken into consideration of FM subgroups in Western medicine. The complex symptomatology in FM can be readily explained by Chinese medicine due to its holistic nature. This capacity of Chinese medicine provides a significant advantage in explaining and in subgrouping or syndrome differentiation of this condition. The other advantage of Chinese medicine is the individualized treatment based on syndrome differentiation.

Questions related to clinical practice

Among various modalities of Chinese medicine, acupuncture is commonly used for painful conditions. Internationally there are more acupuncture trials for FM than Chinese herbal medicine trials.

The two key questions that clinicians and patients may have about acupuncture are

(I) If individualized acupuncture based on Chinese medicine differential diagnosis is better than sham acupuncture;

(II) If individualized acupuncture based on Chinese medicine differential diagnosis is better than the current best treatment or well-accepted, effective treatments.

As shown in the 2012 Cochrane review (6), six out of nine included trials compared acupuncture with sham interventions, and only one compared with a standard treatment, which was Western medications. The six studies that used a standard or semi-standard acupuncture protocol produced inconsistent results. It is therefore essential to study the effect of individualized acupuncture treatment. Since the publication of the 2012 Cochrane review, seven acupuncture trials have been reported in PubMed and two compared acupuncture with Western medications, four with sham interventions, and one with one non-conventional intervention. Two out of the four sham acupuncture-controlled trial used individualized treatment, a significant improvement from the situation five years ago. Both trials demonstrated positive results of acupuncture over sham interventions.

However comparative effectiveness trials are still scarce. A recent trial in Pain Medicine compared acupuncture with

education (7), addressing the gap in the modern literature. Education is well-accepted therapy for chronic pain management, as it engages patients and potentially leads to sustained results.

About the trial

In this randomised controlled trial from the United States of America (7), 30 women with moderate FM were randomly allocated to traditional acupuncture group (n=16) or education group (n=14) to undergo twice weekly treatments for 10 weeks. The practitioner-patient interaction time was carefully matched between the two groups.

The primary aim of the study was to assess the feasibility and acceptability of community acupuncture for this debilitating condition. Only two adverse events were reported and the compliance of the treatment was excellent with one dropped out from the acupuncture group and two from the education group, reflecting that the protocol was feasible and could be carried out in a larger trial. The second aim of the study was to assess if community acupuncture was superior to education, a well-accepted intervention for FM. The authors found Fibromyalgia Impact Questionnaire Scale (FIQS), pain and fatigue improved in the acupuncture group but not in the education group.

The patients in the trial were female, middle age (mean 52 or 56), overweight (BMI =33), and with an average impact score (FIQR =56), moderate pain (VAS 6.2 out of 10) and moderate to severe fatigue (36 out of 50) without severe depression (BDI <29). To be included, patients had to have one of the three TCM diagnoses: Liver Qi stagnation, Qi and Blood deficiency and Qi and Blood stagnation. The unique aspects of the trial are: (I) community acupuncture; (II) using individualized acupuncture treatment according to traditional Chinese medicine diagnosis; and (III) using the comparative effectiveness design to address the gap in knowledge. However patient education as a standalone therapy has not been showed to be effective in FM (8).

Questions related to research about acupuncture

De Qi or not De Qi

The trial (7) discussed here clearly stated that De Qi was not intended in the acupuncture group. This seemly contradictory design is however essential aspect of the trial. A recent study shows that patients with widespread hyperalgesia, or tenderness, induced by long-term use of opioids actually reported more pain after acupuncture and they were more likely to drop out from acupuncture trials (9). A similar phenomenon is observed in patients with FM (10). FM patients with a high pain threshold at baseline responded better to acupuncture with De Qi whereas those with a lower pain threshold at baseline had a better response to sham acupuncture without De qi. The effect of acupuncture on FM seems to be dependent of the baseline level of patients' pain sensitivity and the dose of stimulation.

This challenges our traditional view of acupuncture stimulation.

How to develop individualized acupuncture treatment?

Acupuncture treatments could be tailored to syndrome differentiation or to other important parameters. The 2012 Cochrane review called for an urgent need to standardise Chinese medicine diagnostic criteria for FM syndrome differentiation. To date, this has not been eventuated. Two recent acupuncture trials used different diagnoses, with one having one syndrome, i.e., Liver/Spleen disharmony (11) and the other (7) having three syndromes.

Further to that, it may be necessary to differentiate FM patients based on their pain sensitivity or endogenous pain control. Recently, researchers identified the dichotomy of pain adaptability and found it was related to acupuncture analgesia. When subjected to a prolonged (5 minutes) and intense pain, some people initially reported enhanced pain then a reduction in pain (pain adaptive type) whereas others reported sustained pain at a high level during the 5-minute test (pain non-adaptive type) (12). This dichotomy existed in people without chronic pain (12) and people with chronic musculoskeletal pain (13). It has been found that those of the adaptive type responded better to sham acupuncture and those of the non-adaptive type might respond better to real acupuncture (14).

Types of treatments and controls

To reduce the complexity of the treatment, existing acupuncture trials tended not to include moxibustion or cupping even though both are integral parts of acupuncture. Syndromes that are considered to be deficient and cold, moxibustion must be used. So far only one trial incorporated moxibustion into the protocol.

Comparative effectiveness trials are in a great need. It

is essential to select the standard therapies that have been recommended by guidelines as controls. Education included in the trial by Mist and colleagues (7) has not shown its effectiveness for FM.

Take home message

In conclusion, there are significant advantages of using individualized acupuncture protocol based on Chinese medicine theory for FM. The learnings from the last 30 years are (I) we are yet to have a consensus on Chinese medicine syndrome differentiation of FM; (II) acupuncture treatment must also consider patients' sensitivity, pain adaptability and endogenous pain controls; (III) other therapies associated with acupuncture should be incorporated into the treatment protocol; (IV) future trials should focus on comparative effectiveness studies. For clinicians, acupuncture is worth a try by FM patients, and it is essential that the intensity of stimulation is adjusted to individual's level of pain sensitivity.

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References

1. Walitt B, Nahin RL, Katz RS, et al. The Prevalence and Characteristics of Fibromyalgia in the 2012 National Health Interview Survey. PLoS One 2015;10:e0138024.
2. Staud R, Rodriguez ME. Mechanisms of disease: pain in fibromyalgia syndrome. Nat Clin Pract Rheumatol 2006;2:90-8.
3. Clauw DJ, Arnold LM, McCarberg BH. The science of fibromyalgia. Mayo Clin Proc 2011;86:907-11.
4. Vincent A, Hoskin TL, Whipple MO, et al. OMERACT-based fibromyalgia symptom subgroups: an exploratory cluster analysis. Arthritis Res Ther 2014;16:463.
5. Wolfe F, Clauw DJ, Fitzcharles MA, et al. Fibromyalgia criteria and severity scales for clinical and epidemiological studies: a modification of the ACR Preliminary Diagnostic Criteria for Fibromyalgia. J Rheumatol 2011;38:1113-22.
6. Deare JC, Zheng Z, Xue CC, et al. Acupuncture for treating fibromyalgia. Cochrane Database Syst Rev 2013;5:CD007070.
7. Mist SD, Jones KD. Randomized Controlled Trial of Acupuncture for Women with Fibromyalgia: Group Acupuncture with Traditional Chinese Medicine Diagnosis-Based Point Selection. Pain Med 2018;19:1862-71.
8. Hauser W, Thieme K, Turk DC. Guidelines on the management of fibromyalgia syndrome - a systematic review. Eur J Pain 2010;14:5-10.
9. Zheng Z, Gibson S, Helme RD, et al. Effects of Electroacupuncture on Opioid Consumption in Patients with Chronic Musculoskeletal Pain: A Multicenter Randomized Controlled Trial. Pain Med 2018. [Epub ahead of print].
10. Zucker NA, Tsodikov A, Mist SD, et al. Evoked Pressure Pain Sensitivity Is Associated with Differential Analgesic Response to Verum and Sham Acupuncture in Fibromyalgia. Pain Med 2017;18:1582-92.
11. Vas J, Santos-Rey K, Navarro-Pablo R, et al. Acupuncture for fibromyalgia in primary care: a randomised controlled trial. Acupunct Med 2016;34:257-66.
12. Zheng Z, Wang K, Yao DY, et al. Adaptability to pain is associated with potency of local pain inhibition, but not conditioned pain modulation: A healthy human study. Pain 2014;155:968-76.

13. Wan DWL, Arendt-Nielsen L, Wang K, et al. Pain Adaptability in Individuals With Chronic Musculoskeletal Pain Is Not Associated With Conditioned Pain Modulation. J Pain 2018;19:897-909.
14. Zheng Z, Wong Lit Wan D, Arendt-Nielsen L, et al. Being Adaptive to Pain Enhances Sham Acupuncture Analgesia: A Crossover Healthy Human Study. J Acupunct Meridian Stud 2017;10:385-95.

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