



RESEARCH ARTICLE

Randomized Trial of Trigger Point Acupuncture Treatment for Chronic Shoulder Pain: A Preliminary Study



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Abstract

There is evidence for the efficacy of acupuncture treatment for chronic shoulder pain, but it remains unclear which acupuncture modes are most effective. We compared the effect of trigger point acupuncture (TrP), with that of sham (SH) acupuncture treatments, on pain and shoulder function in patients with chronic shoulder pain. The participants were 18 patients (15 women, 3 men; aged 42–65 years) with nonradiating shoulder pain for at least 6 months and normal neurological findings. The participants were randomized into two groups, each receiving five treatment sessions. The TrP group received treatment at trigger points for the muscle, while the other group received SH acupuncture treatment on the same muscle. Outcome measures were pain intensity (visual analogue scale, VAS) and shoulder function (Constant–Murley Score: CMS). After treatment, pain intensity between pretreatment and 5 weeks after TrP decreased significantly ($p < 0.001$). Shoulder function also increased significantly between pretreatment and 5 weeks after TrP ($p < 0.001$). A comparison using the area under the outcome curves demonstrated a significant difference between groups ($p = 0.024$). Compared with SH acupuncture therapy, TrP therapy appears more effective for chronic shoulder pain.

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1. Introduction

Shoulder pain is an important medical and socioeconomic problem in the western world, with between 7% and 26% of the population reporting shoulder problems at any one time [1]. The presence of pain and stiffness in the shoulder can lead to an inability to work and/or to carry out domestic and recreational activities, thus creating a high burden of disease for both the individual and society [2].

Pain and stiffness of the shoulder is commonly caused by rotator cuff disorders including tendonitis and bursitis, by adhesive capsulitis, and by osteoarthritis of the glenohumeral joint [3]. The normal course of the disease consists of a gradual or sudden onset, accompanied by night pain and pain on moving the affected joint. The mobility of the shoulder joint then becomes progressively more limited, until in many cases a “frozen” or stiff shoulder is the result. The process, according to most of the literature, is generally “self-limiting”, lasting for about 1–3 years. Nevertheless, a significant number of patients suffer from a residual, clinically detectable restriction of movement beyond 3 years [4]. The common treatments for shoulder pain are NSAIDs, physiotherapy, injections, and conservative “wait and see” [5]. Unfortunately, none of these treatments is clearly proven to be effective for chronic shoulder pain in the long run, calling for new treatment strategies to improve the situation of chronic shoulder pain sufferers [4,5].

Worldwide, chronic shoulder pain is considered one of the indications most amenable to treatment with acupuncture [6–10]. A small number of clinical and methodologically diverse trials have been published recently that show little evidence to support or refute the use of acupuncture for chronic shoulder pain [11]. However, whether the effect varies depending on the difference in the acupuncture technique has not clearly been demonstrated.

It is generally accepted that the acupuncture treatment administered in the studies conducted so far, have been based on clinical practice rather than empirical evidence. The method of point selection in published trials seems to be more simple and formulaic than that used in the standard acupuncture practice at our clinic. We believe that the response to acupuncture and therefore, the success of a trial, depend substantially on the choice of and the number of points treated.

The main aim of this study was to determine if acupuncture at trigger points is an effective treatment for chronic shoulder pain, when compared with sham (SH) treatment at trigger points.

2. Materials and methods

The design of this study was a blinded, SH-controlled, randomized clinical trial, in which one group received acupuncture treatment and the other SH acupuncture treatment. Patients aged ≥ 40 years, with a history of shoulder pain, were recruited from the Meiji University of Integrative Medicine Hospital specifically for the study. The patients were outpatients in whom chronic shoulder pain had been clinically diagnosed. Inclusion criteria were: (1)

shoulder pain lasting for ≥ 6 months; (2) no neurological disorders causing shoulder pain; (3) an average pain score of 50 mm or on a 100-mm visual analogue scale (VAS) in the pre month; (4) age between 40 years and 70 years; (5) no referred pain from the cervical spine; (6) no osteoarthritis of the glenohumeral joint or systemic bone and joint disorder (e.g., rheumatoid arthritis); (7) no history of shoulder surgery; (8) no other current therapy involving analgesics; (9) had not received acupuncture in the last 6 months; and (10) insufficient response to the medications prescribed by their orthopedic specialist.

The patient could continue to use their medications as they had before enrolment. Exclusion criteria were major trauma or systemic disease, and other conflicting or ongoing treatments.

Patients who gave written informed consent were enrolled and randomly allocated using a computerized randomization program, to the trigger point acupuncture (TrP), or SH treatment groups. Each patient received a total of five treatments, one per week, each lasting 30 minutes, and was followed-up for 20 weeks from the first treatment.

Patients were blinded to their treatment. They were told before randomization that they would be allocated to one of two groups. The measurements were performed by an independent investigator, who was not informed about the treatment sequence or the treatment the patient received before each measurement. Patients were asked to cover their eyes with an eye mask to blindfold them, and to ensure that they avoided being aware of the SH procedure.

Ethical approval for this study was given by the ethics committee of the Meiji University of Integrative Medicine.

2.1. Trigger point acupuncture group

The trigger point acupuncture (TrP) group received acupuncture treatment at trigger points. The correct application of the technique requires experience in palpation and localization of taut muscle bands and myofascial trigger points. Precise needling of active myofascial trigger points provokes a brief contraction of muscle fibers. This local twitch response should be elicited for successful therapy, but it may be painful and posttreatment soreness is frequent [12,13]. In this study, the most important muscles of the neck and superior limb were examined for myofascial trigger points (Table 1).

Disposable stainless steel needles (0.2 mm \times 50 mm, Seirin, Sizuoka, Japan) were inserted into the skin over the trigger point to a depth of 5–15 mm, appropriate to the muscle targeted, attempting to elicit a local muscle twitch response using the so called “sparrow pecking” technique. After the local twitch response was elicited, or a reasonable attempt made, the needle was retained for a further 10 minutes. The mean number of insertions was 4.1.

2.2. Sham acupuncture group

The sham (SH) group received SH treatment at trigger points. The methods of choosing trigger points were the same. For the SH group, similar stainless steel needles (0.2 mm \times 50 mm) were used, but the tips had been cut off

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