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Brief Report: Is Acupressure an Effective Treatment of Lower Back Pain? A Narrative Review

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Abstract

In Traditional Chinese Medicine, Qi, the life force, is said to have impeded or abnormal flow through the body when disease is present. Restoration of Qi flow is said to regain balance between Yin, Yang and Qi, resulting in the restoration of normal health. A number of therapies have evolved which attempt to restore the normal function of meridians, the channels in the body within which Qi flows. The best known is acupuncture which involves the insertion of needles into pressure points along blocked or affected meridians to restore Qi flow. Acupressure is believed by its advocates to achieve the same goal by applying pressure instead of needles.

Keywords: Traditional chinese medicine; Acupressure, Qi; Lower back pain

Introduction

Acupressure involves targeted pressure application and is used to treat physical, mental and emotional health problems. Immune system functioning, anxiety, muscle aches, nausea and vomiting and addiction are some of the conditions that acupressure is claimed to be able to treat [1]. There are many anecdotal reports and several clinical trials which suggest that acupressure may be an effective treatment for back pain and this brief narrative review summarizes the main evidence for this claim.

Back pain is very common with estimates of the point prevalence being around 15-20% of adults and it also has a hugely important economic burden2. Out of all 291 conditions studied in the Global Burden of Disease 2010 Study, lower back pain (LBP) causes more global disability than any other condition [2].

In terms of studies looking at the use of acupressure for back pain, two of the largest studies have been undertaken by Hsieh et al. In the first of these, 146 participants with LBP were enrolled and randomly assigned to receive 4 weeks treatment of either acupressure or physical therapy [3]. Post-treatment pain scores were significantly lower in the acupressure group than in the physical therapy group, and pain scores remained significantly lower at the 6-month follow-up assessment. However, the researchers acknowledged that the outcomes in the study were assessed by "description of pain character and failed to take into account functional status and disability as recommended by most low back pain researchers" and so they repeated the study with 129 participants [4]. This study, published in 2006, used outcome measures which included Chinese versions of the widely used Roland and Morris disability questionnaire, and the Oswestry disability questionnaire for pain assessment. Again, statistically significant improvements favouring acupressure were seen at the post-treatment and the 6-month follow-up assessments.

More recently, the trans-Pacific collaboration led by Chao-Hsing Yeh has also been trying to determine if acupressure can provide relief from pain and disability due to LBP. An initial feasibility study in 2012 [5] saw 74 participants receive acupressure treatment for one week. The method involved vaccaria seeds being taped onto selected auricular acupressure points. In this uncontrolled study, participants reported a 46% reduction in the The Brief Pain Inventory Short Form (BPI) worst pain, and a greater than 50% reduction in BPI average pain, overall pain severity and pain interference by the end of study. 62.5% subjects reported less pain medication use.

Following this the group conducted a prospective, randomized clinical trial to investigate the feasibility and effects of a 4-week auricular point acupressure (APA) for chronic LBP [6]. Subjects were randomized to either true APA or sham APA (sham acupoints with taped seeds but on different locations than those designated for LBP). The duration of treatment was four weeks. Only 21 participants were randomized into the trial, but those in the true APA group had a 70% reduction in worst pain intensity, a 75% reduction in overall pain intensity, and a 42% improvement in disability due to back pain from baseline assessment. The reductions of worst pain and overall pain intensity in the true APA group were statistically greater than participants in the sham group (Figure 1).

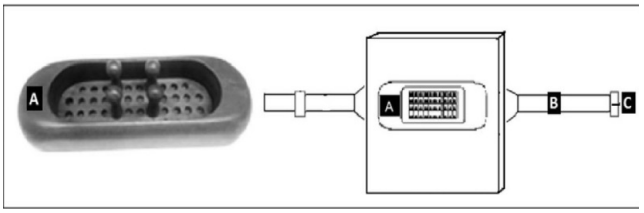

Figure 1: Auricular point acupressure for chronic low back pain.

This group has also investigated the potential physiological mechanisms of APA [7]. In this novel study, 61 participants with

chronic LBP were randomized to real or sham APA for 4 weeks, and blood samples, pain intensity, and physical function were collected at baseline and after 4 weeks of treatment. As in previous studies, those in the real APA group reported a large reduction of pain intensity (56%) and improvement in physical function (26%). Intriguingly, serum blood samples from those receiving true APA showed a decrease in IL-1, IL-2, IL-6, and calcitonin gene-related peptide [CGRP] and an increase in IL-4. In contrast, those in the sham APA group reported only a 9% reduction in pain and a 2% improvement in physical function, and minimal changes of inflammatory cytokines and neuropeptides in the blood sample analyses. The differences in IL-4 and CGRP expression between the real and sham APA groups were statistically significant.

A recent study has assessed the effect of acupressure on LBP in young women suffering from dysmenorrhea. In the study 129 female students were randomly assigned to either acupressure massage three times a week for 30 minutes (experimental group) or they received a manual of menstrual health education (control group) [8]. Focused on LBP in young women suffering dysmenorrhea. Those receiving acupressure reported feeling less pain and during the 12-month follow-up, the experimental group had significantly lower LBP scores (and menstrual distress scores) than the control group.

Finally in terms of the most important recent studies on this subject, Purepong, et al. conducted a trial in 64 office workers where half the group received an 'acupressure-stimulating lumbar backrest', whilst the remaining participants received no intervening treatment. Pain and disability were assessed using questionnaires and the study found that after four weeks workers with backrests reported less pain, whilst employees with no treatment felt more pain than they did prior to treatment [9]. However, it can be argued that this trial is not a study of true acupressure treatment but rather of a one-size ergonomic backrest.

And so overall, recent studies which have examined the use of acupressure as a treatment for LBP have generally been positive; the body of data is far from conclusive though, but suggests that larger, well-controlled studies are warranted. In particular, studies need to account for the strong placebo effect that occurs with treatments such as acupressure and acupuncture, and also the natural history of LBP, which will tend to improve over the medium-long term.

Further studies should also attempt to determine the mechanism of action. Previous studies have suggested that both acupuncture and acupressure elicit the release of endorphins into the circulation [10], and that they also activate the parasympathetic nervous system [11,12].

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