Audit and case series

An audit of self acupuncture for chronic musculoskeletal pain

Silje Teig, Sue Peacock, Lorraine Stevens, Kimberley Tordoff, Edwina Maguire, Paul Watson

Abstract

Background Acupuncture is increasingly offered as a treatment for chronic pain, but continued treatment is expensive. Self acupuncture might offer a cost effective alternative. The aim of this project was to investigate the effectiveness and safety of self acupuncture in a pain clinic.

Methods A retrospective audit was conducted by postal questionnaire of all patients with chronic pain who were taught self acupuncture as a home pain management strategy in the previous three years. The study was conducted by a researcher not involved in the patient’s treatment. The patients selected for self acupuncture were those who had responded to acupuncture previously, met certain criteria, and had been taught self acupuncture successfully. Patients were taught self acupuncture using three acupuncture points (LI4, ST44, LR3).

Results Of 52 eligible patients (70% female) who were approached, 38 valid questionnaires were returned, giving a response rate of 73.1%. Of these, 76.3% were female; 86.8% (33) still used self acupuncture and 13.3% (5) had stopped; 86.8% of the patients continued to experience pain reduction with self acupuncture. The reported pain relief gained was 5.7 (SD 2.6) measured on a visual analogue scale, improvement in quality of life was reported by 73.7% and no serious adverse effects were reported.

Conclusion This audit suggests that self acupuncture is effective for pain relief and improves quality of life in this selected group of patients. Safety can be maintained provided that pre-selection is done with care, and appropriate training is carried out. Self acupuncture has considerable potential to reduce clinic waiting lists and appointment times for patients. Further research is required to determine the cost effectiveness of this approach.

Keywords Acupuncture, chronic pain, self management, self acupuncture, musculoskeletal.

Introduction

Acupuncture has now become a popular complementary approach in the Western world for many different diseases. Acupuncture is widely available in chronic pain clinics despite the inconclusive evidence of effectiveness. A meta-analysis of randomised controlled trials showed it has a positive effect on reducing pain, but the effect in clinical practice is often short-lived.1 There is some evidence that acupuncture, although no more effective than other treatments for pain conditions, may be more cost effective than some other interventions.12 Wonderling et al found that although acupuncture in the management of chronic headache was more expensive than usual care, it could be cost effective.13 The cost effectiveness was mainly manifest in the reduction of other healthcare expenses and the cost of continued repeated consultations. Smallwood likewise has indicated a cost effective improvement in patient outcomes and additional health benefits in primary care.1 However, there is an increased cost in providing acupuncture in secondary care.4 Although there are reported health benefits for acupuncture in musculoskeletal pain, if the cost of acupuncture could be reduced then the cost effectiveness would be improved. The most significant cost in secondary care is the clinician’s time.
It is difficult to know the real place of acupuncture, like other complementary interventions, because of the lack of trials comparing complementary with mainstream procedures in clinical practice. Despite this, chronic pain is commonly treated using acupuncture, which leads to an increasing number of referrals for treatment. Continued treatment can prove expensive for patients who pay for their treatment, and consumes considerable public resources where provision of acupuncture comes under the remit of public health services. The increasing interest in self management for chronic pain patients presents self acupuncture as an option, particularly as some patients might be reluctant or unable to attend regular appointments because of the demands of employment, carer duties, or transport and access difficulties. Acupuncture applied in the clinical setting is very safe, and serious side effects or adverse events are very rare. However, concerns have been expressed about the safety of self acupuncture even in patients who have been trained to perform it and additional safety concerns arise in connection with the disposal of used needles.

Literature reviews reveal scarce information regarding self acupuncture; there is some evidence that it is being utilised by some healthcare practitioners, but the way that patients are selected and taught acupuncture and the effectiveness of self management have not been extensively reported. A small audit of 16 patients demonstrated beneficial effects, and other authors have supported its use. Suitable patients were taught self acupuncture by one of three nurse pain specialists (KT, EM, LS). Patients had to demonstrate competence to perform the procedure on themselves to the satisfaction of the nurse practitioner (normally on three occasions) before they were issued with acupuncture needles and a needle disposal box. Telephone support was available to patients via the specialist nurses. A supporting information sheet was given to the patient (see Appendix 1) and a follow up appointment was made for approximately one month.

The audit procedure was in line with local audit requirements. The contact details of patients who had been taught self acupuncture were obtained. A questionnaire requesting details on the use of acupuncture, effectiveness and details of adverse events was mailed out, with a stamped addressed envelope for the reply by an independent researcher (ST). Patients were asked to respond within four weeks. Those who failed to respond after four weeks received a telephone reminder. The returned questionnaires were entered on to SPSS and descriptive statistics were used to identify compliance, pain relief, quality of life, adverse effects of treatment and reasons for non-compliance in those who had ceased to perform self acupuncture.

The reasons for non-compliance were assessed by the free text response to the question 'If you no longer use self-acupuncture, why did you stop using self acupuncture (e.g pain is gone, acupuncture did not give good pain relief)'

Pain relief was measured on three 100mm Visual Analogue Scales requesting the patients to 'Please rate your pain relief by marking on the line that best describes the pain-relief you get from the self acupuncture' on average, best pain relief, and worst pain relief.

Criteria for use of self acupuncture

Patients who had pain relief from a trial of three sessions of acupuncture given in the clinic setting, and were willing to learn self acupuncture, were given training supported by written instructions. Patients were not given training in self acupuncture if physical limitations precluded them from applying it. Before being permitted to continue with self acupuncture, patients had to demonstrate their ability to perform it safely in the opinion of the nurse specialist.

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Improvement in quality of life as a result of acupuncture was assessed by a simple global dichotomous yes or no response to the question ‘Do you feel your quality of life has improved since starting self acupuncture?’

Adverse events were assessed by a free text response to an item asking about the occurrence of such events... ‘Do you have any side-effects from the self acupuncture?’

Results
Fifty-four patients were recorded as self acupuncture, but one patient was excluded because the patient’s spouse had been taught to give acupuncture, not the patient, and one was excluded as the patient had never actually been taught self acupuncture but had been included on the list in error. Therefore 52 patients were eligible and 38 valid questionnaires were returned, a response rate of 73.1%.

Of the questionnaires returned 76.3% (n= 29) were from females. The age range of respondents was 24-77 years, mean age 48.09 years (SD 14.14). The majority of the sample described themselves as English, three described themselves as Indian, and one as Irish; 28.9% were in paid employment.

All patients had chronic pain, the duration of pain ranged from 1.5 years to 20 years, with a mean of 9.65 years (SD 6.31); 33/38 respondents (86.8%) continued to use self acupuncture as they had been taught. The duration of using self acupuncture was from one to 36 months with a mean of 10.67 months (SD 10.4).

Five respondents (13.2%) had stopped using self acupuncture. Their stated reasons were: lack of time (n=1); lack of pain relief (n=1); too much pain to be able to do self acupuncture (n=1). Two patients gave no reason.

Self acupuncture was administered a mean of 2.6 times a week (SD 1.40). The duration of the treatment ranged from five to 60 minutes per session; the mean duration was 23 minutes (SD 10.16).

Of the respondents, 86.8% (33/38) reported pain reduction and reported a mean usual pain relief score with acupuncture of 5.7 (SD 2.56) measured with a VAS (0-10). The mean duration of pain relief experienced was three days. Worst pain relief was reported as a mean of 3.7 (SD 2.32) on VAS, while best pain relief was a mean of 6.2 (SD 2.60) see Figure 1. Improvement in quality of life since starting acupuncture was self-reported by 73.7% of respondents.

Adverse events
The adverse effects reported are given in the table below. Most respondents did not report any adverse effects from the self acupuncture, seven reported minor adverse events. No severe adverse events were reported.

Audit and case series
Discussion

Any audit is highly dependent on the response rate of the questionnaire. The response rate of this audit was high, at 73.1%, which allows the findings to be generalised more confidently to the wider group. The majority of people performing self acupuncture reported pain relief, which is important in a chronic pain population, where pain relief is often difficult to achieve. What is particularly significant is the degree of pain relief achieved. The mean pain relief achieved was 5.7 on a 0-10 scale or more than 50% reduction of pain on average. In recognition that the response to acupuncture varies, the patients were asked for their minimum and maximum pain relief by acupuncture. Even when pain relief was at its worst a mean reduction of over one third was reported. This gives the impression that the patients are doing self acupuncture the right way and are experiencing its benefit as an analgesic.

The duration of pain relief is considerable at a mean of three days, but within this was marked variation: seven patients reported that pain relief lasted for only six hours, although some reported pain relief lasted up to a week. This is more than can be claimed for many analgesic medications. It should be remembered that this patient group comprised people who had already responded to acupuncture. Why a small minority did not continue to experience relief remains to be investigated although reduced response over time in some individuals is a common clinical experience.

Patients were advised to perform acupuncture no more than once every two days, but at least one person performed daily treatment. There is no evidence that daily treatment is harmful. Patients were allowed to take control of their own treatment rather than being given prescriptive guidelines which might be inappropriate to their needs. Likewise, there are no reliable data in the literature on the duration of each treatment for maximal effect and patients adapted their treatments to their own response to acupuncture. This resulted in a wide variation in the number of treatments and treatment duration. The beneficial effect could possibly be attributed to patient selection of their own treatment regime rather than an externally imposed one.

Many of these patients are on other medications for their pain and although they attribute the improvement to the acupuncture we cannot be sure of the role of other pain relieving medications. The patients may use self acupuncture at a time of the day when they feel especially relaxed or when the medication is most effective. These factors could also have contributed to the pain relief experienced.

We were unable to monitor medication use during this audit, so the medication sparing properties of self acupuncture warrant further investigation. Other authors have reported that acupuncture can reduce the need for other supplementary medication or treatment. Possible synergistic effects of medications can only be assessed by a prospective audit or a controlled trial.

The adverse effects reported are few and minor. However, it should be noted that this refers to any adverse effect and gives no indication of the frequency of the adverse effects. Those noted are similar to other reports. It is reassuring to relate that there were no serious adverse effects and adverse effects were not given as a reason for ceasing to perform acupuncture. However, there might have been some underreporting of minor adverse effects if the patient considered them to be insignificant.

The points used in this study were chosen for a number of reasons, not all based on sound scientific evidence, as there is relatively little evidence for the use of one point over others. The points selected had to have some proven utility in chronic pain but they also had to be in ‘low-risk’ areas and points that would be accessible by people with physical limitations. Points LI4 and LR3 are said to be useful in rheumatic diseases, and they are considered to be a popular combination when treating stress and injury. ST44 is reported to be useful for general analgesia and headache. One needs to consider the effectiveness of using so few points; increasing the number of acupuncture points might increase the efficacy for patients. Tailoring the points used to individual needs should also be considered, but this
Audit and case series

presents difficulties when trying to standardise training and procedures for safety, as some points are more likely to be associated with risks than others. These points were used in the trial period before training in self acupuncture and only those who responded to this treatment were selected to perform self acupuncture. It is feasible that more patients might be suitable if different points were used that were more specific to their condition.

In all treatments one can expect to see a placebo effect, and self acupuncture is not exempt from this. The placebo effect is shown to have more effect on moderate to severe pain than on mild pain. It is also shown that pain due to disease or injury gives a higher placebo effect than with laboratory-induced pain. Furthermore, a positive attitude towards the treatment and expectations of a positive effect is of great importance for the placebo effect, and acupuncture is prone to this positive bias. This is important to consider with regard to the placebo effect in the patients in this audit. When a chronic pain patient starts acupuncture this is because of active consent from the patient. The patient’s expectations of the efficacy of the treatment are highly influential in its success. In this study the patients commenced self acupuncture after they had already demonstrated a positive response in the clinic and had agreed to undergo training to perform self acupuncture. This group is not ‘value free’ in this regard; however, one must remember that other treatments which are more interventional, and carry greater risk, are also carried out contingent on a positive patient response, so this should not be used to denigrate the positive effects on pain relief in this study. Furthermore, the effect shown in this audit is so unequivocal and so consistent over time that it is unlikely that all of it can be dismissed as a placebo effect.

Many audits reported in the literature have been conducted by the treating clinician; in this study all contacts with the patients and the handling of the data were performed by an independent researcher (ST). Keeping this distance should reduce the effect of social desirability (willingness to please the clinician) and other sources of bias. The researcher had no previous contact with the patients and all data were handled and analysed independently of the acupuncture practitioners (the specialist nurses).

We were not able to perform a cost effectiveness analysis in this audit, nor were we able to compare the results with a control group who were suitable for self acupuncture but were denied the opportunity. The cost of providing needles and a means of safe disposal is small in comparison to the cost of regular visits to a specialist nurse. Due to pressure on resources this group would not have received treatment for more than 10 sessions. Although ‘top-up’ sessions are available, patients are routinely left for long periods without treatment appointments. Self management provided regular and, in this case, effective pain relief, so should be considered in future. Any future cost analysis should consider not only acupuncture clinic time and costs but also the potential analgesic-sparing that pain relief through acupuncture may bring.

This study appears to be the first audit looking at self acupuncture in chronic pain patients attending a secondary care specialist pain clinic. In this study self acupuncture appears to be effective for pain relief and improvement in quality of life in a selected group. The small sample size presents a problem and emphasises the need for larger studies and in particular the need for prospective randomised controlled trials.

Conclusions

This research suggests that self acupuncture is safe and offers a good degree of pain relief and improvement in quality of life in this selected sample. Furthermore, it suggests that self acupuncture might be a useful way of managing people who have experienced pain relief through acupuncture in the clinical setting, thus reducing clinic appointments for the patient and freeing up staff time for other patients.
Reference list


### Appendix 1  Patient information sheet

<table>
<thead>
<tr>
<th>Instruction:</th>
<th>Disposing:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please read and sign the enclosed policy.</td>
<td>Dispose the yellow sharps bin as directed and bring it back to clinical nurse specialist at outpatient.</td>
</tr>
<tr>
<td>Only perform the acupuncture (ACP) on yourself, never do it if you have alcoholic drink. Use as instructed only for the management of your pain. Only use the needles that we give you as demonstrated. Avoid any visible veins, moles, lumps, bumps, infected or broken skin, insert superficially as you have been shown. Perform the ACP in a quiet clean environment. Sterility is really important. Never re-use the needles and always wash your hands very well and dry thoroughly. Clean skin at the acupuncture site with the steril or soap and water and allow it to dry before putting needles in. If there is bleeding when you are removing needles, press hard with clean cotton wool ball or a tissue until well after the bleeding stops. Do not perform ACP when you are hungry or feeling unwell. Ensure the sharps box and needles are stored well out of the way of children.</td>
<td></td>
</tr>
<tr>
<td>Location of Acupuncture points</td>
<td></td>
</tr>
</tbody>
</table>

**LR3**: This point is 1 inch away from the margin, between your big and next toe. Insert the needle obliquely at a 45 degree angle, pointing towards the front of your foot.

**ST44**: This point is between the 3rd and 4th toe, 1 inch from the margin. Insert the needle obliquely at a 45 degree angle, pointing towards the front of your foot.

**LI4**: This point lies at the highest point of the muscle when the index finger and thumb are closed together. Insert vertically (straight down) 1/4 inch deep.

Treatment should be repeated when pain reoccurs, no more than once in two days. Observe for any signs of infection and report to the Hospital immediately.

If you are concerned about anything then please contact the Pain Clinic.

You will receive a follow up appointment in about 1 month.
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