

Acupuncture for some common disorders: a review of evaluative research

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SUMMARY. *This paper reviews the use of acupuncture to treat several disorders where pain is not the primary symptom. Studies on asthma have shown a small but consistent short-term therapeutic effect of acupuncture. One study of long-term effects found no improvement in asthma after acupuncture while the other reported a modest effect on symptom relief but with a greater impact on medication reduction. Further studies of the long-term effects of acupuncture on asthma would seem desirable even though the currently available findings are equivocal. Sufficient work has now been carried out on sensorineural deafness to conclude that acupuncture has no worthwhile effects on this condition. Only two studies have been carried out on tinnitus; they indicate that the effects of short courses of acupuncture are at best slight. There are some encouraging findings for acupuncture treatment of hypertension, although the study was seriously flawed by the lack of a no treatment control group. With regard to giving up smoking it seems that acupuncture may assist during the withdrawal period and that it compares favourably with other forms of treatment; whether there is any specific effect of the acupuncture is not yet clear. As with other attempts to stop people smoking, however, there is a high relapse rate. The trials of acupuncture on psychiatric disorders have suffered from the lack of detailed assessment and control groups; no conclusions can be drawn without further studies. The studies on weight loss similarly do not permit any firm conclusions about the usefulness of acupuncture.*

Introduction

IN traditional Chinese medicine acupuncture forms a central role in a comprehensive system of medicine aimed at the maintenance of health and the correction of disease processes. It has consequently been used to treat a wide variety of conditions.¹ In the last 15 years a considerable amount of effort has been devoted to the systematic evaluation of therapeutic acupuncture and it is now possible to make some assessment of the efficacy of acupuncture in the treatment of different conditions.

We have recently reviewed the literature evaluating the acupuncture treatment of chronic pain.² Although the overall standard of the research is not high there are sufficient studies of good or moderate quality to permit certain conclusions to be drawn. Even poorer is the standard of research on the acupuncture treatment of problems where pain is not involved, though there are some notable exceptions.^{3,4}

Common problems in studies which evaluate acupuncture include inadequate assessment measures, inappropriate control

groups, inadequate or insufficient treatment and a lack of follow-up data. Most of these concerns are common to evaluations of any treatment and will not be discussed here; their impact on trials of acupuncture is considered in more detail in an earlier paper.⁵ There are particular problems associated with the definition of an appropriate placebo control group for acupuncture trials. The most common placebo control condition has been to place the acupuncture needles at theoretically irrelevant sites (sham acupuncture); the problem with this procedure is that it too may have specific effects rendering it unsuitable as a placebo condition.^{5,6} Critics of this kind of control condition have favoured more inert procedures such as mock transcutaneous electrical nerve stimulation or a form of sham acupuncture involving only shallow penetration and minimal stimulation. Both sham acupuncture and minimal sham acupuncture are referred to in this review.

In this paper we review the acupuncture treatment of several disorders where pain is not the primary symptom: asthma, sensorineural deafness, tinnitus, hypertension, psychiatric disorders, smoking addiction and obesity. Only English language publications will be considered, since although good studies may have been published in China, those which have been translated are not of high quality.⁷ We review all areas where controlled trials have been carried out as well as others where the studies are interesting if not definitive. In a number of other conditions, such as allergic rhinitis⁸ and dysmenorrhoea,⁹ insufficient work has been carried out to permit an evaluation of the effectiveness of acupuncture. Acupuncture is now also receiving wide attention as a treatment for heroin withdrawal.¹⁰ We feel however that serious consideration of this issue is beyond the scope of this paper.

Asthma

Although there are a number of uncontrolled trials of the acupuncture treatment of asthma^{11,12} this review will concentrate on the controlled studies. These fall into two classes: first, those of an experimental nature where only a single or small number of sessions of acupuncture is given to asthmatic patients and the short-term effects monitored; second, treatment trials where a course of acupuncture is given and both short and long-term effects are assessed.

Tashkin and colleagues compared classical acupuncture, sham acupuncture (needle insertion at incorrect sites), isoprenaline, saline and no treatment in metacholine-induced asthma.³ On a wide range of objective measures of lung function (specific airway resistance, thoracic gas volume and forced expiratory flow volume) the authors showed a significantly greater effect of real acupuncture over sham and saline, though isoprenaline was the most effective treatment. Saline and sham acupuncture were equally effective and both were more effective (but not statistically) than no treatment. Although the asthma was artificially induced the 12 patients all had chronic asthma of long duration. Similar controlled studies have been conducted by other investigators without the metacholine induction. Virsik and colleagues¹³ showed a significant increase in peak flow and forced expiratory flow volume and a decrease in airway resistance after a single session of acupuncture in patients with chronic bronchial asthma. In acute asthma Takishima and colleagues¹⁴ and Yu and colleagues¹⁵ reported significant changes in lung

function after acupuncture treatment. Two controlled studies have monitored the short-term effect after each of a series of treatments: positive results were reported by Berger and Nolte¹⁶ but negative findings by Dias and colleagues.¹⁷ Neither of these studies addressed the question of long-term benefits.

It has proven more difficult, however, to demonstrate the efficacy of acupuncture as a therapy for asthma. In a later study Tashkin and his colleagues compared eight sessions of acupuncture with eight sessions of sham acupuncture in the management of chronic asthma.⁴ The treatment procedures were identical to those in the single session study. The trial was subject and evaluator blind, employing a crossover design in which all 25 subjects received both true and sham acupuncture with a three to four week interval between. They employed a range of outcome measures including daily ratings of symptoms and records of medication, objective measures of lung function, patients' self-assessment of their condition and physicians' findings pre- and post-acupuncture treatment and throughout the study. In contrast to Tashkin's earlier study the results failed to show a significant change from baseline for measures of symptoms, medication use or lung function with either form of acupuncture. Although the crossover design would have obscured any differential effect of true and sham acupuncture in the long-term, the absence of any short-term effects makes this less important.

Christensen and colleagues conducted a similar study in which the effects of 10 twice weekly sessions of acupuncture were compared with 10 sessions of minimal sham acupuncture.¹⁸ Seventeen patients with stable bronchial asthma were treated and changes assessed by daily self-ratings, measures of lung function and laboratory assessment of mean blood immunoglobulin E levels. The results of the study indicated an effect, albeit modest, of acupuncture on both subjective and objective measures of asthma as compared with baseline. There was a significant difference between true and sham acupuncture on all assessed parameters two weeks after therapy began but the differences were insignificant thereafter. At this time, for the true acupuncture group, peak flow had increased by 22% (morning) and 7% (evening) and daily medication decreased by 53%. This group remained significantly improved throughout the period of the trial (11 weeks) though with diminished gains over time. While the effects on lung function were, as the authors comment, modest there was also a substantial effect on medication intake which would be valuable even in the absence of other effects. It is unfortunate that the brief follow-up period (four weeks) did not permit any conclusions about the long-term value of acupuncture in controlling asthma with reduced medication.

Sensorineural deafness and tinnitus

The history of research into the treatment of sensorineural deafness by acupuncture reads like a cautionary tale for researchers. It has been well summarized by Taub.¹⁹ The principal finding is that early reports of subjective improvements²⁰⁻²² have not been supported by later studies involving audiometric measures and a more systematic use of subjective self-report measures. Rosen²⁰ reported that in 1959 the Eleventh People's Hospital, Shanghai, had been claiming success in 80-90% of patients, but that later estimates of improvement had been drastically lowered. In Leung and his colleagues' study²³ audiometric evaluations were obtained on 38 patients following the 4th, 8th, 16th and 24th acupuncture treatment. Fifty-eight per cent of the patients reported some subjective improvement but there was little change on the audiograms. Studies by Eisenberg and colleagues²⁴ and Rosen²⁰ on 14 adults and 30 children respectively also failed to show any audiometric changes of clinical significance. Rosen treated the 30 children for six months, providing approximately 15 acupuncture treatments per month. Even with such intensive treatment none of the

measurements showed improvements of clinical or statistical significance and only two of the children exhibited any signs of consistent improvement in hearing levels. Madell in a similar study on 40 children also failed to show any effect of acupuncture on sensorineural deafness.²⁵

Finally, in 1982 a report was made from the Beijing Research Institute of 1000 cases of sensorineural deafness treated over a period of 20 years.²⁶ They concluded that '... acupuncture has little effect on deaf mutism and sensorineural lesion as revealed by audiometry. It may be of some benefit in the recovery of an active and reversible cochleoneural lesion as shown in a few cases, but in the vast majority of cases acupuncture does not exert any influence on the course of the disease'. Thus the earlier enthusiasm generated by reports based on subjective impressions of improvement has not been sustained when more careful studies have been carried out.

Two controlled studies of the treatment of tinnitus by acupuncture have been carried out.^{27,28} Both compared true acupuncture with a form of sham acupuncture involving minimal penetration. Both were of crossover design and claimed to be double blind though strictly speaking they were single blind with independent assessment; that is the therapist was not blind to the treatment condition. In Hansen and colleagues' study²⁷ subjects received six sessions of both true and sham acupuncture and change was assessed with a crude subjective rating scale and a sound balancing technique. The authors reported a significant reduction in subjective ratings of symptoms over the course of the trial for patients who had placebo acupuncture first but as there was no difference between true and placebo acupuncture for this group of patients the authors did not attribute this change to the effects of acupuncture. Subjects in Marks and colleagues' study²⁸ received only two sessions of true and sham acupuncture. Five subjects out of 14 experienced a subjective improvement after true acupuncture, but this was not confirmed by tinnitus matching tests or visual analogue measures. No significant changes of any kind were reported for the sham group. Changes in the loudness of the tinnitus above threshold were recorded in both groups but these apparently did not reach significance. The authors of both studies commented that tinnitus matching might not reveal small subjective improvements.

While neither study revealed any significant effect of acupuncture on tinnitus, Marks and colleagues speculated that a subgroup of patients might exist who would benefit with more sustained treatment. A possible criticism of both studies, especially that of Marks and colleagues, is that too little treatment was given to assess adequately the possible contribution of acupuncture in such a refractory condition.

Hypertension

Tam and Yiu gave intensive courses of daily classical acupuncture to 28 patients with hypertension.²⁹ Each course of therapy lasted for 10 days with an interval of three to five days between courses. Patients had between one and four courses of treatment. Blood pressure was recorded pre-treatment, daily during treatment, between courses of treatment and once a week for two months after treatment. Given that there was an adequate amount of treatment and consistent and frequent blood pressure recordings including a follow-up (but no baseline) it is disappointing to find the results presented simply as single pre- and post-treatment measures, with no further information about the timing of these measures or whether they are single measures or averages. Impressive changes were nonetheless reported. The average reduction in blood pressure was of the order of 30 mmHg for systolic pressure and 10 mmHg for diastolic. In 57% of patients blood pressure returned to 'normal' levels (criteria

unspecified) and relief of associated symptoms (for example, giddiness, headaches) was rated excellent or good. More confidence could be placed in these findings if blood pressure had been similarly monitored in an untreated control group.

Sugioka and colleagues were less enthusiastic about the results of their study of eight hypertensive patients.³⁰ Their patients showed non-significant reductions in systolic and diastolic blood pressure after 10 treatments in a four-week period. These eight subjects were part of a larger group of 54 involved in a trial of chlorthalidone and propranolol. Although both these drugs showed significant effects for the group as a whole, chlorthalidone being the more effective, the authors stated that chlorthalidone was ineffective in reducing blood pressure in the eight subjects who went on to have acupuncture. It seems unwise to conclude as they do that acupuncture is of no benefit in the management of essential hypertension as their subjects were a highly selected sub-group who had already been shown to be resistant to conventional treatment. Although Tam and Yiu's study²⁹ is more encouraging it too should be viewed with caution unless the results can be confirmed in a more fully reported controlled trial with a longer follow-up period.

Psychiatric disorders

It has been reported that acupuncture is used to treat a wide range of psychiatric disorders in China.³¹⁻³³ Few details are available, however, of the exact diagnoses of the patients or the processes involved in their treatment, of which acupuncture is often only a component. Schizophrenia, manic-depressive psychosis and the neuroses have all been treated with acupuncture but there is little detailed information on outcome.³³ More information is no doubt available in Chinese language publications.

An exception to the lack of detailed reporting of controlled studies is provided by Luo and colleagues from the Institute of Mental Health, Beijing.³⁴ They compared electroacupuncture and amitriptyline in the treatment of depressive disorders of between one month and two years duration. Assessment interviews were carried out by two psychiatrists, using clinical rating scales; inter-rater reliability was good. Substantial reductions in depressive symptoms were achieved in both groups. There are, however, considerable problems in attributing these changes to the efficacy of either electroacupuncture or amitriptyline. Depression of comparatively short duration is likely to change substantially in a five-week period, especially when the patients have regular contact with people who are interested in their welfare and monitoring their progress. A no-treatment control group would have been a valuable addition to this study. A second problem concerns the huge number of treatment sessions given to the acupuncture group — 30 one-hour sessions in five weeks. This makes a meaningful comparison of the two groups impossible as the patients receiving drugs were only seen once a week.

The few studies from outside China offer little more illumination. Shaub³⁵ reported the treatment of 40 depressed or anxious patients using an ear electroacupuncture technique. A good response was claimed for about two-thirds of the patients. But the report was vague and a particularly serious flaw was that no follow-up was reported except in two cases. Lo and Chung³² at least provided pre- and post-treatment ratings of symptoms for their series of eight anxious patients. The ratings were made by a psychiatrist not involved in the treatment and good to moderate results were claimed in six out of eight cases.

The only study of acupuncture and psychiatric disorders to attempt systematic collection of data and the inclusion of baseline control conditions is that of Kane and Di Scipio.³⁶ They treated three schizophrenic patients with acupuncture, sham

acupuncture and individual sessions of equivalent time-course, maintaining 'a concerned doctor-patient relationship'. There was a five-day baseline period, two weeks of true acupuncture, two weeks of supportive sessions, two weeks of sham acupuncture and a further two weeks of support. The patients were assessed by 'blind' ward staff on a standard rating scale. The authors claimed that two of the patients who had florid schizophrenic symptoms responded positively to acupuncture and negatively to sham acupuncture and that this difference in response was statistically significant. Inspection of the graphs, however, reveals no clear trends across different conditions, which casts some doubt on the statistical analysis of the small numbers of subjects. It would be interesting to see the study repeated with longer baseline and treatment periods, more clearly formulated hypotheses, higher patient numbers and more clearly presented results.

The verdict for all these studies can only be that the efficacy of acupuncture in the treatment of any psychiatric disorder remains unproven. The inclusion of non-treatment and placebo control groups would be especially valuable as spontaneous fluctuations in symptomatology and high placebo responsivity are perhaps especially likely.³⁷

Smoking addiction

The technique employed to aid withdrawal from smoking is different from the usual methods of classical acupuncture. The basic technique is the insertion of a stud in a particular acupuncture point in the ear. The stud is left in place and the patient is instructed to press it when a desire to smoke overtakes him or her. The actual point involved varies from study to study. Some studies have used electrical stimulation of needles in the ear but with nothing being left in place.³⁸

Some authors have claimed impressive reductions in smoking after acupuncture treatment. Sacks,³⁹ for example, claimed that 61% of a sample of 642 smokers were abstinent after six months, but his paper contained almost no details of how this conclusion was arrived at. Systematic controlled studies have been less encouraging. Lamontagne and colleagues⁴⁰ compared self-monitoring with two types of acupuncture, one aimed specifically at smoking withdrawal and the other aimed at enhancing relaxation. Subjects in the self-monitoring group had two weekly 20-minute sessions with a therapist but only to report on their own efforts to reduce smoking with the aid of a wrist counter.⁴¹ Both types of acupuncture were significantly more effective than self-monitoring in the two weeks post-treatment but these differences disappeared at one, three and six months follow-ups. Clavel and Benhamou⁴² compared acupuncture, nicotine gum and a minimal intervention control in a study involving 651 smokers. Acupuncture was as effective as nicotine gum and both were significantly more effective than the control at both one and 13 months follow-up. As usual there was a high rate of relapse; at one month 19% and 22% of smokers were abstinent in the acupuncture and nicotine gum groups respectively and at 13 months 8% and 12%.

Cottraux and colleagues⁴³ found acupuncture to be superior to behaviour therapy after nine and 12 months but equal to placebo medication. They concluded that 'as in most smoking cessation studies the overall effect was small and non-specific'. This is similar to the findings of Gillams and colleagues⁴⁴ who concluded that 'the claims made for acupuncture are somewhat over-enthusiastic, however acupuncture does seem to be as effective as other methods of smoking withdrawal'. Gillams and colleagues also considered the question of the siting of the ear stud, but found no difference between the recommended 'lung' point and a nearby 'incorrect' site.

Results from Fuller's technique of incorporating electrical

stimulation combined with a discussion of the medical risks look more encouraging;³⁸ 95% of his subjects stopped smoking after three acupuncture treatments given over four days. After one month, however, only 71% of subjects were abstinent and at two years this figure had fallen to 30%. Various aspects of the design, in particular the manner of subject selection and the exclusion of subjects not replying to follow-up questionnaires, makes it possible that these figures are an overestimate.

It is clearly important to distinguish between an intervention that assists people in the initial withdrawal period and one designed to discourage them from resuming smoking. There seems to be no reason to suppose that acupuncture or any other physical intervention will be of direct help in preventing relapse several months after it is given. On the other hand it does seem to be as useful as other methods in the initial stages of withdrawal. Fuller's combination of electroacupuncture and discussion seems a potent initial influence on smoking, and perhaps we should not hope for more. It is unfortunate that the design of the study does not permit any examination of the specific role of electroacupuncture. Indeed it is not yet clear from any of the studies what the actual stimulation contributes to the overall effect of acupuncture treatment.

Obesity

The acupuncture technique employed to help people lose weight is similar to that used for smoking. A stud is placed in the ear to be stimulated by the patient or a small needle is stimulated electrically and then removed. The studies that purport to evaluate this technique are very poor. Sacks³⁹ claimed a good response from 75% of 1030 subjects but few details were given. Giller⁴⁵ in a study of the treatment of 120 volunteers reported that 70% of subjects treated at the 'hunger' point experienced decreased appetite compared with only 20% who had a stud in another part of the ear. Neither of these studies, however, is of sufficient quality to enable even tentative conclusions to be drawn. Bin and Jiuzhi⁴⁶ treated 350 obese volunteers and reported that 66% of them reduced their weight by more than 3 kg by the end of the treatment. A course of treatment constituted seven treatment sessions; the implanted needles were replaced and adjusted every four days. It is difficult to evaluate the particular contribution of ear acupuncture to the subjects' loss of weight as they appeared to have had a variable number of courses of treatment implying a considerable number of treatment sessions extending over weeks or months. A comparison of this procedure with one in which subjects monitored their weight and received similar attention from a clinician would help clarify whether ear acupuncture has any specific contribution to make to the treatment of obesity.

Conclusion

The quality of the studies reviewed above has generally been poor. Even where the standard is higher studies are usually too few in number to assess definitively the efficacy of acupuncture for a particular disorder. Conclusions must therefore be largely tentative and in some areas no conclusions may be drawn at all.

What are the implications for the general practitioner of this review and the previously published findings on the treatment of pain with acupuncture? Short-term and possibly long-term benefits may be expected in the treatment of back pain. The efficacy of acupuncture for headache, cervical pain and arthritis is less well supported but there are some encouraging results; at least a proportion of patients is likely to obtain significant relief.² Modest benefits might be obtained for asthma. Treatment of sensorineural deafness by acupuncture is a waste of time.

Acupuncture seems as effective as other methods for the treatment of smoking addiction. For the other disorders reviewed here few guidelines can be given. Where benefits have been shown for the problems considered here it has not been possible to attribute them definitely to the specific effects of acupuncture. This is obviously a crucial issue for research. However, a question of possibly more immediate importance for the general practitioner is whether a patient might derive some benefit from having acupuncture treatment, whether it be from the effects of the needling or via less tangible psychological processes. Even if there are currently no clear indications for or against the use of acupuncture in a particular disorder an individual patient who finds the method and philosophy sympathetic might derive considerable benefit from it.

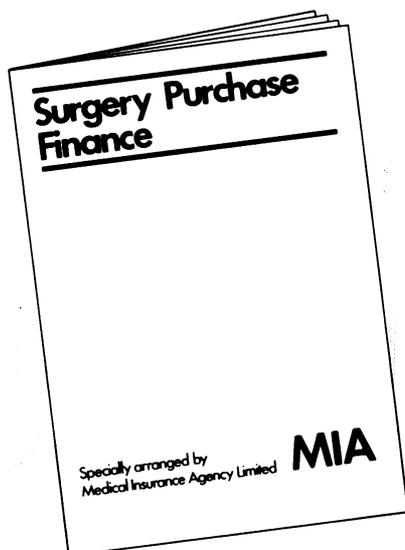
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