

Belfast experience with P6 acupuncture antiemesis

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SUMMARY

In a strictly controlled clinical situation, (postoperative sickness) where variables were reduced to a minimum, it was possible to demonstrate an effective prophylactic antiemetic action of P6 (Neiguan) acupuncture. Manual and electrical non-invasive (needling) stimulation of this point were equally effective. Non-invasive stimulation (transcutaneous electrical or pressure) was effective in the early post-operative period, but the effect did not last as long as for invasive acupuncture — although it was as good as standard antiemetics. Stimulation of a “dummy” acupuncture point was ineffective as was administration of the acupuncture after the emetic stimulus (opioid). This effect can be blocked by local anaesthesia at the P6 point.

Acupressure (P6) is moderately effective in reducing morning sickness, but here there is more of a psychological element as pressure on a “dummy” point gives some alleviation of symptoms.

Given in conjunction with standard antiemetics, P6 acupuncture is a useful adjuvant in reducing sickness after cancer chemotherapy. This effect can be prolonged for 24 hours by acupressure.

INTRODUCTION

During a visit to the Republic of China, in an antenatal clinic in Beijing, I saw young girls being taught to press their right forearm as a prophylaxis against morning sickness.¹ I decided to see how this would work when used in the clinical situation in which we have investigated the efficacy of various antiemetic drugs.² One English language acupuncture textbook mentioned this use,³ and described the location of the P6 or Neiguan point. P6 indicates that it is the sixth point on the pericardial meridian. It lies two Chinese inches^{4, 5} (about 5 cm) from the distal wrist crease, between the tendons of flexi carpi radialis and palmaris longus: on needling at that point to a depth of 1 cm one elicits a non-anatomically distributed sensation known as “chi” (qi).

We were unable to locate any scientific studies as to the antiemetic efficacy of stimulation of the P6 point either by manual acupuncture or electroacupuncture, by transcutaneous electrical stimulation or by pressure, which presented a challenge. It was not anticipated when the studies started at Musgrave Park Hospital in 1984⁶ that they would be continuing, albeit in a modified form, some six years later; nor was it expected that they would have any clinical application. This paper summarises the findings in over 2,000 P6 acupuncture

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administrations. Most of the individual studies have been reported in detail elsewhere^{1, 6-15} and this review only deals with the overall findings.

The initial studies were approved by the Queen's University Research Ethical Committee: the technique is now recognised as standard treatment.

ANAESTHETIC STUDIES

Over four years, studies were carried out in patients scheduled for minor operations, standardised as shown in Table I. The premedication was given intramuscularly by the anaesthetist 60–90 minutes preoperatively, and at the same time acupuncture, or another method of stimulus at the P6 point was carried out (transcutaneous electrical stimulation or acupressure). The studies included stimulation of a point outside the known acupuncture meridians (dummy acupuncture) and the use, in random order, of two standard antiemetics (cyclizine 50 mg and metoclopramide 10 mg). The acupuncture needle was either manually rotated or electrically stimulated (10 Hz DC) and after a number of initial observations^{1, 7} the period of stimulation was limited to five minutes. In all studies patients were told that the procedures were being studied to try to "improve the effect of the premedication", but the exact postoperative observations to be made were not given until the six hour postoperative visit.

TABLE I

Acupuncture at the P6 point; basis of studies following anaesthesia

Opioid premedication	Nalbuphine 10mg
Standard population	Women: 15–60 yr; 50–75 kg
Standard operation	Dilatation and curettage: 7–10 min
Standard anaesthesia	Methohexitone N ₂ O/O ₂
Postoperative observations at 1 and 6 hours	Vomiting, including nausea and retching Nausea alone

The results, summarised in Fig 1, are based on a minimum of 62 observations per series, except for dummy acupuncture when, for ethical reasons, the number was limited to 31. All methods of stimulation of the P6 point caused a significant reduction ($p < 0.01$) in postoperative sickness, compared with the untreated controls. Dummy acupuncture was ineffective as an antiemetic. The overall benefit of invasive acupuncture at P6 (manual or electrical) was greater than that of non-invasive (transcutaneous electrical or pressure) stimulation of the P6 point. This was due to the shorter action of the latter: the reduction in sickness was similar with all methods during the first postoperative hour, but in the one to six hour period invasive methods were superior. At all times of observation invasive acupuncture was a superior antiemetic than conventional drugs, whose action was similar to that of non-invasive stimulation of P6.

Timing of acupuncture. In two studies application of invasive acupuncture during general anaesthesia (which included an opioid) was without effect.^{16, 17} Despite our failure to find any antiemetic action with dummy acupuncture, there could still be a psychological explanation for the apparent effects of the acupuncture, its absence of effect in anaesthetised patients supporting that view. Alternatively the

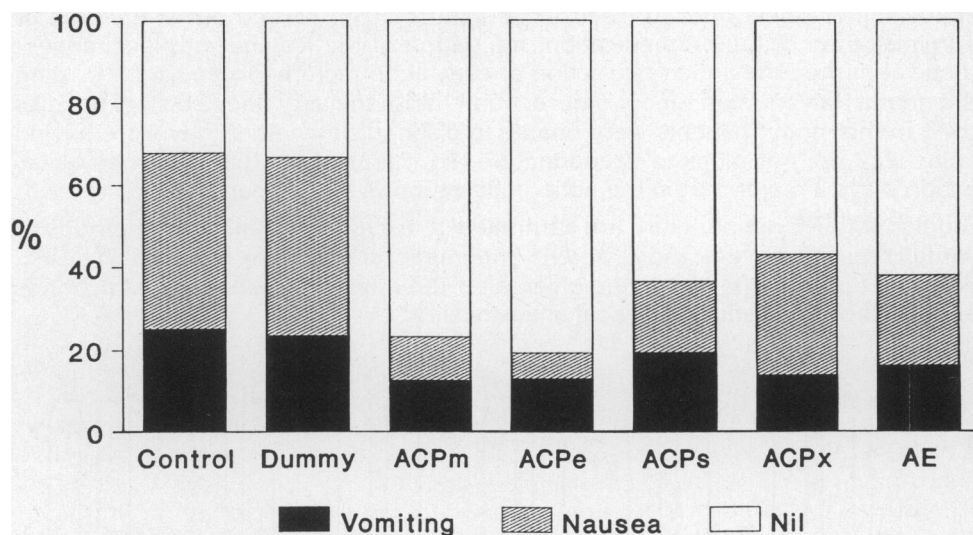


Fig 1. The efficacy of measures to prevent postoperative nausea and vomiting (0-6 hours).

ACPM = Manual acupuncture

ACPe = Electrical acupuncture

ACPs = Transcutaneous stimulation

ACPx = Acupressure

AE = Standard antiemetics

administration of the acupuncture after rather than before the emetic stimulus (opioid premedication) could explain the difference. Table II summarises findings when acupuncture was given with premedication (early) or immediately before or during anaesthesia (late). These studies show that late acupuncture is relatively ineffective compared with its administration at the same time as premedication.

TABLE II

Overall (0-6 hr) incidence of vomiting (including nausea and vomiting, or retching) and nausea, related to the time of administration of the acupuncture. Infiltration of the P6 point with lignocaine (blocked) or saline (not blocked) was carried out during further studies of early acupuncture

Acupuncture	n	Vomiting	Nausea	Nil
Nil	56	25%	43%	32%
Early	87	13%	13%	78%
Late	33	33%	27%	49%
P6: blocked	37	34%	17%	49%
: not blocked	37	13%	6%	81%

Mode of Action. Chinese studies have suggested that blocking the acupuncture site with local anaesthesia abolished its analgesic action.¹⁹ To see if this applied to the antiemetic effect, the P6 point was infiltrated in random order with either

lignocaine or saline prior to electroacupuncture being carried out at the time of administration of the premedication. Infiltration of the P6 site with local anaesthetic abolished the antiemetic action of early acupuncture (Table II), supporting the neural transmission theory of its action.²⁰ With the very fine (26 swg) needles used in this study, patients were unable to distinguish whether they were having "blocked" or "not blocked" acupuncture, so it is unlikely that a psychological action plays a major part in the antiemetic action of P6 acupuncture.

Studies with P6 acupuncture are summarised in Fig 2. The invasive methods of stimulating P6 have a more potent antiemetic action than the non-invasive. Acupuncture is ineffective when given after the emetic stimulus and its action is abolished by infiltration with local anaesthesia.

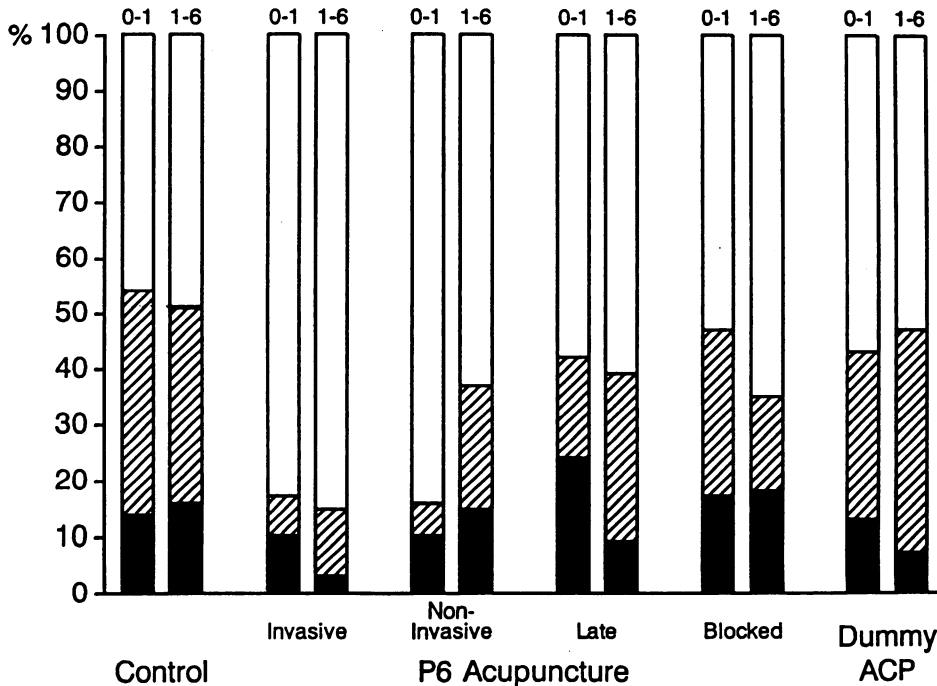


Fig 2. Comparison of the beneficial effect of invasive and non-invasive P6 acupuncture with an untreated control series and a group who received acupuncture at a "dummy" point. Also shown is the relative ineffectiveness of late acupuncture, and the abolition of its therapeutic effect by infiltration of the P6 point by local anaesthetic.

MORNING SICKNESS

The beneficial effects of self-administered acupuncture has been studied in 350 consecutive women attending the antenatal clinic of the Royal Maternity Hospital.²¹ A self-reporting system of study was adopted, patients being given either no treatment, told to press P6 for five minutes every two – three hours, or to press a dummy point at the right elbow. Although the incidence of returned records (70%) was less than hoped for, the findings in Table III show benefit from P6 acupressure, with lesser benefit from pressing the "dummy" point. Since patients had to have the reason for pressing their elbow explained to them, the latter would appear to be a psychological effect.

TABLE III

Acupuncture at the P6 point, and other studies: percentage incidence of varying degrees of morning sickness, reported by patients attending the antenatal clinic at the Royal Maternity Hospital, Belfast

<i>Acupressure</i>	<i>n</i>	<i>Severe or troublesome</i>	<i>Moderate</i>	<i>Slight or nil</i>
Nil	119	56%	21%	23%
P6	110	19%	21%	60%
Right elbow	112	37%	37%	26%

CYTOTOXIC DRUG THERAPY

Troublesome sickness is a major problem with some forms of cancer chemotherapy²²⁻²⁴ particularly cisplatin and DTIC. The oncologists at the Northern Ireland Radiotherapy Centre welcomed our studies to see if P6 acupuncture had anything to offer in this field. Seventy-one consecutive patients who had had at least two previous courses of chemotherapy were questioned regarding their sickness.²⁵ Despite the use of established antiemetics, 54 (76%) of these had troublesome sickness at the first administration, of whom 52 had the same experience with the next course.

Acupuncture studies were all carried out on patients who had a history of troublesome sickness during a previous course of chemotherapy despite the use of conventional antiemetics. These were repeated at the next course when manual or electroacupuncture was carried out immediately before administration of the chemotherapy. Outpatients were seen at their next visit to the clinic, while inpatients were seen frequently in the wards, when the acupuncture was repeated if necessary. This was an "open" study as it was necessary to explain its objectives in detail to the patients, but on ten occasions it was possible, without the patients' knowledge, to stimulate a dummy point in the course of repeated acupuncture. Before embarking on the major project, which involved 105 patients, a small pilot study in 15 patients was undertaken. This was successful in gaining the confidence and co-operation of the nursing staff as 12 of these patients had considerable benefit from the acupuncture.

Based on the reports of the patient, and of the nursing staff in hospitalised patients, the benefit was graded on a simple four point scale, ranging from complete alleviation of symptoms to no benefit. The findings which have been reported in detail elsewhere¹² are summarised in Table IV. In the crossover study only one patient benefited from the dummy acupuncture compared with nine who had P6 acupuncture.

There are two problems with invasive acupuncture as an antiemetic — not all patients welcome needles, and the effect only lasts for about eight hours. Attempts to overcome the former by patient-administered transcutaneous electrical stimulation were only partly successful,¹⁴ but the latter problem can be largely overcome by application of an elasticised band and stud (Sea Band) over P6, the patient being instructed to press this for five minutes every two hours.¹⁵ Here the results (Table V) in inpatients (96% had good or fair alleviation of sickness) are superior to those in outpatients (85% success), presumably due to the frequent reminding by the nursing and medical staff of the necessity of repeated pressure on the stud. To do this only when one feels sick is not effective.

TABLE IV

Sickness during cancer chemotherapy: summary of the beneficial effects of P6 acupuncture in the "open" studies in cancer chemotherapy at the Northern Ireland Radiotherapy Centre

		<i>Alleviation of sickness</i>			
<i>Neoplasm</i>		<i>n</i>	<i>Good</i>	<i>Fair</i>	<i>Slight or nil</i>
Inpatients	: Testis	29	16	12	1
	: Lymphoma	5	2	3	0
Outpatients	: Breast	64	46	15	3
	: Lymphoma	7	2	3	2
Crossover study	: various neoplasms	10	9	1	0
Total		130	87	36	7

TABLE V

Sickness during cancer chemotherapy: summary of benefit obtained over 24 hours by the use of electroacupuncture followed by acupressure

		<i>Alleviation of sickness</i>			
		<i>n</i>	<i>Good</i>	<i>Fair</i>	<i>Slight or nil</i>
Courses of treatment					
	Inpatients	43	26	14	3
	Outpatients	43	32	5	6
Individual patients					
	Inpatients	20	16	4	0
	Outpatients	20	15	2	3

Continuing studies are based on doctor-administered transcutaneous electrical stimulation of P6 followed immediately by application of the stud, with instructions to press this for five minutes every two hours. Although not quite as effective as needling followed by pressure, the results are sufficiently promising to warrant continuing investigation. Simplification of the method of stimulation has enabled a number of co-operative intelligent patients to use the apparatus themselves. Following an explanation they apply a current for five minutes every two hours. There is no need for professional acupuncturists. The ultimate aim would be to build a very small transcutaneous electrical stimulator into the button on the elasticised Sea Bands. This could be worn for three – four days, as required by patients, and activated by pressure every two – three hours as necessary. Much work is needed before this aim is accomplished; it is a far cry from the first sceptical attempts at invasive P6 acupuncture in gynaecological patients. Initially all acupuncture and allied procedures were done on the right forearm. A survey showed that only 7.5% of patients claimed to be left handed and a retrospective analysis of findings in 650 patients showed slightly greater benefit when the procedure was carried out on the dominant side¹³ and we recommend this practice.

DISCUSSION

This work started as an attempt to test a traditional Chinese remedy by orthodox Western methods of clinical research, with standardisation of method of study and elimination of variables as far as is possible under everyday working conditions. The need for such studies has been emphasised by the British Medical Association report on Alternative Medicine.²⁶ There has been a suggestion that single aspects of traditional Chinese medicine should not be practised without the full oriental approach²⁷ but our findings refute this view.²⁸

The most difficult aspect of these studies became the acceptance that a technique which was initially regarded with scepticism did in fact work. This conversion was a long and stressful process for all involved. The hostility shown to the first presentation of the findings at a scientific meeting⁶ was not expected and reflects the conservative outlook of our profession to anything which is outside the field of orthodox medicine.

This work could not have been carried out without the support of many people. Thanks are due to the senior members of the Department of Anaesthetics, Professor R S J Clarke, Drs J P H Fee and J Moore for facilitating availability of junior staff. At all stages this was very much a "team effort" and among others, particular thanks are due to Drs W N Chestnutt and A G A Lynas who carried out the first anaesthetic studies, Drs K T J Fitzpatrick and R G Ghaly for both anaesthetic and oncology studies, Dr K M Bill for the acupuncture studies, Dr M McKinney for the statistical analyses, Mrs Eileen Fee and my present assistant Dr Jing Yang for the transcutaneous stimulation studies and Dr F Sourial for the obstetric studies. Without the co-operation and encouragement of Mr J K Houston, Professor W Thompson and the late Dr G A Lynch who provided access to suitable patients, and to their corresponding nursing and medical staff, these studies would not have been possible.

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