

## Japanese Acupuncture – Current Research

*Japanese Traditional Medicine Text (11) –*

*Orthopedic Medicine*

Masahiro Iwa

Associate Professor

Faculty of Acupuncture and Moxibustion

Meiji University of Integrative Medicine

### A. Postoperative nausea and vomiting, postoperative intestinal paralysis

Various symptoms and complications occur after surgery, for example postoperative nausea and vomiting (PONV) and postoperative ileus (POI). These seem to be especially adaptable acupuncture and moxibustion therapy. Of course these are due to various factors but anesthetics and analgesic drugs used after surgery are certainly big factors. These not only reduce patient quality of life, but also delayed recovery after surgery and prolong hospitalization. We examined recent evidence suggesting acupuncture treatment is useful for coping with side effects of drugs such as PONV and POI.

#### 1. Clinical Studies from Abroad

Studies on the effects of acupuncture point stimulation for postoperative complaints overwhelmingly focus on PONV. A PubMed search using keywords [postoperative nausea] and [acupuncture] produced 150 relevant articles. Approximately 30 references were found for clinical research using RCTs in the past 10 years (since 2000).

After reviewing more than 25 references, we extracted 8 reports for examination here.

Table 7 shows the RCT literature examined effects of acupuncture point stimulation for PONV<sup>(1-8)</sup>. Every year, a number of papers are presented from Western countries. Targeted techniques or acupuncture point stimulation covers a wide range of treatment options: acupuncture, electrical acupuncture, Transcutaneous and percutaneous electrical stimulation (TENS), laser stimulation,

acupuncture electrical stimulators, acupuncture point Shiatsu. Additionally, a wide variety of sample sizes, control group criteria and sham treatment group criteria contributes to a wide range of effects and conclusions. P6 tends to be used most frequently as a treatment area. Because treatment methods may be used pre-operatively, intra-operatively and post-operatively, there has been a recent trend to use percutaneous electrical stimulation as opposed to electro-acupuncture.

To begin with a review of the RCT literature, Cochrane published the latest report<sup>9)</sup>. The antiemetic effects (POVN) of P6 were verified by comparing actual needling with sham needling. It was found that patients treated with P6 requested fewer anti-emetic drugs. It was further found because that there was no difference in effect between the acupuncture and the antiemetic, acupuncture stimulation might be reasonable as a means for preventing PONV. Shiao<sup>10)</sup> et al, used a meta-analysis and found that both acupuncture and anti-emetic medications were equally effective for reducing PONV. Notably, it was reported that for patients treated with acupuncture, there were fewer requests for emergency anti-emetic which is useful for POVN patients. Further, the systematic review by Sun<sup>1)</sup> et al., they investigated the side effects of opioids in post-operative PONV patients. It was reported that the acupuncture group, compared to the control, had a reduced occurrence of nausea but there was not significant difference concerning the incidence of vomiting. Dune<sup>12)</sup> et al, reported in their systematic review on pediatric POVN the effects of acupoint stimulation. Acupuncture and acupuncture point Shiatsu led to significantly decreased postoperative vomiting in children. Notably, acupuncture and acupuncture point Shiatsu were found to be more effective than electro acupuncture for these subjects.<sup>z</sup>

Allen<sup>13)</sup> et al. conducted a meta-analysis on the effects of stimulus at P6 for PONV following Cesarean surgery under spinal anesthesia. Requests for Inter-operative, post-operative nausea and

vomiting and emergency anti-emetic medications were reduced however, several inconsistencies in the protocol may diminish the strength of the analysis and conclusions. Also, the Gynecology Physicians Association of Canada's Executive Council has published management guidelines<sup>14)</sup> recommending electrical stimulation of acupoints as prophylaxis and as useful for PONV. Acupoint stimulation received a high evaluation and was strongly recommended based on evidence based evaluation grades II-1 (I, II-1 through II-3, III of 5 levels). It received a grade A on the A-L 6 level recommended degree classification. As the above research suggests acupuncture has been used successfully as a preventive therapy for PONV.

What remains unclear is, to what extent are these protocols being used successfully clinically? On the other hand, regarding post-operative ileus (POI), a PubMed word search was conducted using [postoperative ileus] and [acupuncture], 1 RCT reference was extracted<sup>15)</sup>. Post-operative Colon cancer patients were given electro-acupuncture at GB34 and SJ6 for 6 days following their surgery. However, it was reported that electro-acupuncture was ineffective for preventing POI in these patients. Until recently, most fundamental RCTs on the effects of acupuncture stimulation for gastrointestinal motility have focused in irritable bowel syndrome (IBS) and very little research has been done on these effects in POI patients.

Table 7 Major Research Paper on Acupuncture Point Stimulation for Post-Operative Nausea and Vomiting

Researcher (year)	Name of surgery	Treatment area	Treatment method	Sham
Wang <sup>1)</sup> (2010)	Cranial Surgery	Nei Guan (PC6)	TENS	Non-acupoint areas
Frey <sup>2)</sup> (2009)	Laparoscopic cholecystectomy	Nei Guan (PC6)	ReliefBand (electro acupuncture stimulation device)	Not operating the ReliefBand
Frey <sup>2)</sup> (2009)	Hysterectomy	Nei Guan (PC6)	ReliefBand (electro acupuncture stimulation device)	Not operating the ReliefBand
Sahmeddini <sup>4)</sup> (2008)	Laparoscopic cholecystectomy	Points on the Sympathetic nervous system, stomach points, Shen Men (UB23), Occipital point	Auricular acupuncture	Affixed with tape
Arnberger <sup>5)</sup> (2007)	Laparoscopic cholecystectomy	Nei Guan (PC6) (Median nerve domain)	TENS	TENS used on/ along the Ulnar nerve
Habib <sup>6)</sup> (2006)	Caesarean Section	Nei Guan (PC6)	ReliefBand (electro acupuncture stimulation device)	Stimulate the dorsal aspect of the wrist with a ReliefBand
White <sup>7)</sup> (2005)	Orthopedic Surgery	Nei Guan (PC6)	ReliefBand (electro acupuncture stimulation device)	Not operating the ReliefBand
Gan <sup>8)</sup> (2004)	Mastectomy, Surgery for Breast Cancer	Nei Guan (PC6)	TENS	Electrode only affixed

## 2. Current Clinical Studies and Prospects for the Future of Japanese Research

A web search of online journals for the keywords [postoperative nausea] and [acupuncture] or [postoperative intestinal paralysis] and [acupuncture] produced numerous references however, many of these were from minutes at meetings, discussions and case study reviews, none of which were RCTs. One pilot study for PONV, reported on 11 cases of Gynecologic Surgery whose subjects were given tack needles at St36, P6, Shen Men (auricular point). Results suggested that PONV was reduced for these subjects<sup>16)</sup>.

On the other hand, regarding POI, 12 relevant reports<sup>17,18)</sup> were extracted, however these are quite dated. All of these reports set control groups but these did not use sham acupuncture and the sample sizes were between 12 and 15 subjects which was too small. The acupuncture protocol included either St36 and LI11 (20 minutes, once a day, 3 days following surgery) or SP13 and SP6 with retention (Post-surgery 16 hours). Positive results were obtained as the period of post-operative flatulence was significantly reduced. Further, although not primary research, we also conducted acupuncture on patients following gastro-intestinal surgery. Tack needles were placed at LI4 and ST36. Compared to the control groups, the test group reported significantly less post-operative flatulence<sup>19)</sup>. There is an especially strong trend for patients following gastro-intestinal surgery to suffer from extended periods of flatulence, so in this case acupuncture was effective.

Here, on the subject clinical research of acupuncture and moxibustion therapy in surgery, we attempted to review appropriate RCTs on the effects of acupuncture administered post-operatively for PONV and POI, however, compared to Western countries, far fewer papers have been published in Japan. The differences between Western and Japanese acupuncture and moxibustion research is the most important factor. In Western countries,

particularly the United States since 1999, within the NIH, The National Center for Complementary and Alternative Medicine (NCCAM) has been established. Every year, millions of dollars are donated by National Research Foundations, Harvard, Johns Hopkins, UCLA, Maryland, Duke and many other University and medical institutions conducting clinical trials on the effects and usefulness of acupuncture. Additionally, numerous medical institutions have incorporated various complimentary medical modalities into their Integrated Medicine Departments. One prime example might be the acupuncture done at Memorial Sloan Kettering Cancer Center, one of the world's leading cancer centers. Also, in the United Kingdom in 2000, British medical doctors approved acupuncture treatment (published in the British Medical Journal), and began conducting acupuncture research is being conducted. In contrast, it must be said that compared the great amount of clinical research from the West, Japan is clearly a step or two behind. Not until 2010 did the Democratic Party Healthcare policy adopt an integrated medical model promoting the "Establishment of integrated health care" and inauguration of an integrated health project team. However, as of March, 2010, the "Japan Medical Association for integrative medicine report released their opinion" suggesting that the current flow of the Japanese Medical Association runs counter to the trends of integrative medicine.

These different attitudes to alternative medicine (acupuncture) expressed by the established medical communities in the West and in Japan, reflect differences regarding the fundamental awareness of and purpose behind alternative medicine. From the background to the citations we reviewed here, Western considers acupuncture a useful modality for counteracting the side effect of pharmaceuticals. Certainly, the cost effectiveness of acupuncture cannot be overlooked and we may even begin to see more evidence based RCTs as a result. However, as

is often the case in Japan, the specialists, institutions and facilities focused on acupuncture research tend to be pursuing evidence based research with the primary purpose of proving the efficacy of acupuncture and moxibustion.

In the future, it is considered important that, beyond the narrow scope of orthopedics, high level RCTs on acupuncture and moxibustion from Japan be organized and conducted by established organizations, medical facilities, doctors and other researchers, all of which have the financial resources to design and carry out specialized research on its many uses and conveniently economical procedures.

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