

Japanese Acupuncture – Current Research

Japanese Traditional Medicine Text (12) –

Orthopedic Medicine

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B. Post-operative Pain

Post-operative advances in anesthetic management have been shown to decrease the incidence of post anesthesia pain and complications. However, the remaining challenges are to minimize the side effects and over-reliance on pain relief drugs, such as morphine. In recent years, there has been interest domestically to inhibit post-operative pain and complications. To this end, numerous reports from the of practices complementary and alternative medicine (CAM) using acupuncture analgesia which may activate the descending pain inhibitory system as a means to reduce reliance on morphine.

1. The current situation of Clinical research abroad

We conducted a PubMed search using the keywords “postoperative pain” and “acupuncture” for all post-operative pain research up until 2010 and found 174 relevant references. Several reports included SR and RCT evidence based research. Sun et al.¹⁾ of Duke University discusses the details of post-operative pain relief through acupuncture in a survey style systematic review of 15 papers (Figure 7). The articles referring to acupuncture treatment for post-operative pain included 8 papers on chest and abdominal surgeries, 4 on general orthopedic surgeries and the last 3 focused on oral surgeries. Various acupuncture methods were used from auricular and electro-acupuncture to transcutaneous electrical acupoint stimulation (TEAS). These researchers found reductions in numbers of postoperative complaints, amounts of analgesics requested and noted the pain-relieving effects of these modalities. Excluding the effects of the auricular acupuncture, the aim of using a

specific point and treatment area, notably, LI4 and St36, appeared to provide similar analgesic effects for post chest and abdominal surgery patients. Please refer to Figure 8 for these clinically useful results. (Table 8)²⁻⁸⁾

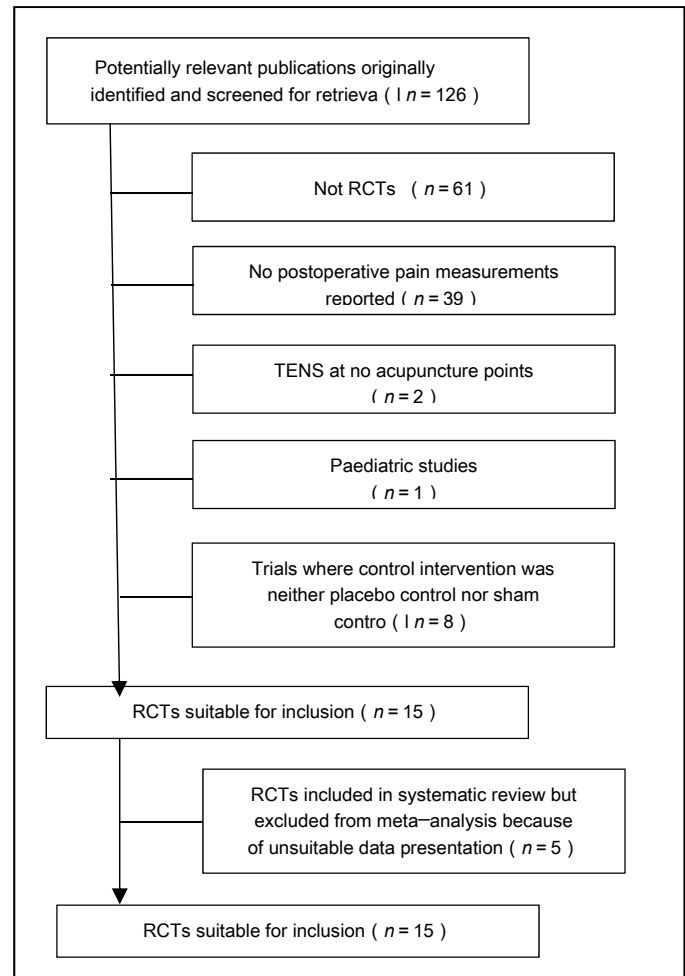


Figure 7 Systematic Review of Acupuncture for Post operative pain by Sun Y et al.

2. Current Situation of Clinical Research in Japan

We searched relevant medical search engines for the key words “Neuropathic pain” and “Acupuncture and Moxibustion treatment” for references between 1983 and 2010 and extracted 44 references. However, most of these reports were case studies and only one was an RCT⁵⁾. It is clear that most Japanese acupuncture research for post-operative pain management uses electro-acupuncture and TEAS rather than auricular acupuncture.

Additionally, in a consensus statement issued by the United States National Institute of Health (NIH) it was concluded that acupuncture is effective for postoperative pain in general, chemotherapy-induced nausea and vomiting and postoperative dental pain (1997). With a few references omitted, published literature is presented providing evidence that acupuncture is effective for chest and abdominal post-operative pain (Table 8). Many of these reports on acupuncture analgesia use electro acupuncture at distal points on the arms or legs. The mechanism advocated by many researchers refers to the descending pain inhibitory system, thereby stimulating endorphins, and other endogenous analgesia mechanisms. Clinical efforts to reduce the amount of analgesics, such as morphine, especially in the early post-operative stages, to reduce the incidence of such as gastrointestinal motility by postoperative ileus⁴. We compared acupuncture analgesia for pain management after abdominal surgery with a “no-intervention” control group (Table 9). Ten of the 11 subjects in the control group required normal doses of analgesics, whereas for the 11 subjects in the acupuncture treatment group (Table 10) only one was not to reduce the amount of necessary analgesics. We attribute these results to the involvement of endorphins⁵.

3. Management challenges for the application of acupuncture analgesia for post-operative pain

Post-operative pain following abdominal and chest surgeries may vary with incision length, invasiveness of the procedure, length of time required for the procedure. Pain management begins with preoperative epidural anesthesia (pre-emptive analgesia) (leading analgesic) and is then supplemented with postoperative intravenous pain medication controlled by the patient with a button (patient controlled analgesia PCA)⁶. These methods are quite stable way to manage pain. PCA methods, combined with the application of acupuncture analgesia, including perioperative anesthetic management needs to be better understood in an anticipation of reducing the dose of analgesics injected into the epidural. Further research is necessary to investigate the potential of effectively reducing postoperative complications such as POVN and PI by implementing complementary, alternative and integrative medicines.

Table 8 Acupuncture Analgesia for Chest and Abdominal Post-Operative Pain Management

Researcher (year)	Treatment area	Acupoint stimulation area	Acupuncture pain management (minutes)
Wang ² (1997)	Lower abdomen (digestive organs)	LI4	TEAS (30 minutes)
Chen ³ (1998)	Lower abdomen (uterus)	ST36	TEAS (30 minutes)
Ishimaru ⁵ (1999)	Abdominal area (digestive organs)	LI4, ST36	Electro-acupuncture (3 hours)
Kotani ⁴ (2001)	Abdominal area (digestive organs)	Urinary bladder channel (BL17 – 26)	Embedded needles (4 day retention)
Lin ⁶ (2002)	Lower abdomen (uterus)	ST36	Electro-acupuncture (20 minutes)
Sim ⁷ (2002)	Lower abdomen (uterus)	LI4	Electro-acupuncture (45 minutes)
Wang ⁸ (2006)	Chest/trunk area (lungs)	LI4, GB34 etc.	Electro-acupuncture (20-30 minutes)

Table 9 Relationship between the Degree of Postoperative Pain and Analgesic Use

No	Age	Sex	Surgical procedure	Anesthesia time (minutes)	Right after operation	3 hours after operation	6 hours after operation	9 hours after operation	12 hours after operation
1	63	M	Subtotal gastrectomy	150	2	2	3 pentazocine 1A	1	0
2	68	M	Colorectal high anterior resection	225	1	1	1	1	1
3	70	M	Colorectal high anterior resection	150	2	2	3 diclofenac sodium 50mg	1	0
4	81	M	Cholecystectomy	120	2	2	3 pentazocine 1A	1	0
5	74	M	Subtotal gastrectomy	215	2	2	2	3 diclofenac sodium 25mg	1
6	71	M	Colorectal lower anterior resection	210	2	1	2	3 diclofenac sodium 25mg	1
7	74	M	Total gastrectomy	225	1	3 pentazocine 1A	3 diclofenac sodium 25mg	2	2
8	31	M	Subtotal gastrectomy	180	2	2	3 diclofenac sodium 25mg	0	0
9	80	F	Cholecystectomy	50	2	2	3 diclofenac sodium 25mg	0	0
10	69	M	Subtotal gastrectomy	290	1	2	3 diclofenac sodium 25mg	1	0
11	70	F	Subtotal gastrectomy	205	2	2	3 diclofenac sodium 50mg	2	2

Post Surgical Pain Evaluation 0: no pain, 1: low degree of pain, 2: persistent pain, 3: persistent pain and analgesic use.

Table 10 Relationship between the use of acupuncture analgesia for post-operative pain and the use of analgesics

No	Age	Sex	Surgical procedure	Anesthesia time (minutes)	Right after operaton	3 hours after operation	Elctro-acupuncture 6 hours after operation	9 hours after operation	12 hours after operation
1	67	M	Choledochojejunos-tomy	220	2	1	0	0	0
2	71	M	Right hemi-cholectomy	170	2	1	1	0	0
3	71	M	Total gastrectomy	395	2	0	0	0	0
4	57	M	Cholecystectomy	160	2	0	0	0	0
5	67	M	Cholecystectomy	75	1	1	0	0	0
6	41	M	Subtotal gastrectomy	175	2	1	1	0	0
7	57	M	Subtotal gastrectomy	210	2	3 diclofenac sodium 50mg	1	0	0
8	65	M	Colorectal high anterior resection	166	1	1	0	0	0
9	88	F	Abdominal-perineal resection	225	2	1	0	0	0
10	82	M	Subtotal gastrectomy and cholecystectomy	200	2	0	0	0	0
11	53	F	Subtotal gastrectomy	166	2	1	1	0	0

Post Surgical Pain Evaluation 0: no pain, 1: low degree of pain, 2: persistent pain, 3: persistent pain and analgesic use.

References

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