11. Gastrointestinal, Hepato-Biliary-Pancreatic Diseases

Reference

Kotani N, Hashimoto H, Sato Y, et al. Preoperative intradermal acupuncture reduces postoperative pain, nausea and vomiting, analgesic requirement, and sympathoadrenal responses. *Anesthesiology* 2001; 95(2): 349-56. Pubmed ID: 11506105

1. Objectives

To evaluate the effects of intradermal acupuncture on pain, nausea and vomiting, intravenous morphine consumption, and plasma cortisol and catecholamines after abdominal surgery.

2. Design

Randomized controlled trial using sealed envelopes for allocation (RCT-envelope).

3. Setting

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4. Participants

One hundred and seven patients undergoing upper abdominal surgery and 82 undergoing lower abdominal surgery.

5. Intervention

Upper abdominal surgery group:

Arm 1: Intradermal acupuncture group: intradermal needles (5 mm in length and 0.16 mm in diameter) were inserted horizontally into the skin at the bilateral acupuncture points of BL18 (肝俞), BL19 (胆俞), BL20 (脾俞), BL21 (胃俞), BL22 (三焦俞), BL23 (腎俞), and BL24 (気海俞), fixed with bandages, and retained until postoperative day 4 (n=54).

Arm 2: Control group: intradermal needles were put, without insertion, on the same sites as in Arm 1, fixed with bandages, and retained until postoperative day 4 (n=53).

Lower abdominal surgery group:

Arm 1: Intradermal acupuncture group: intradermal needles (5 mm in length and 0.16 mm in diameter) were inserted horizontally into the skin at the bilateral acupuncture points of BL20 (脾俞), BL21 (胃俞), BL22 (三焦俞), BL23 (腎俞), BL24 (気海俞), BL25 (大腸俞), and BL26 (関元俞), fixed with bandages, and retained until postoperative day 4 (n=41).

Arm 2: Control group: intradermal needles were put, without insertion, on the same sites as in Arm 1, fixed with bandages, and retained until postoperative day 4 (n=41).

Nine and five patients in the upper and lower abdominal surgery groups, respectively, were excluded from the analysis due to postoperative complications.

6. Main outcome measures

Verbal rating scale (4-point scale from 0 to 3, with a lower score indicating less severity) scores for postoperative pain (incisional and deep visceral pain) and postoperative nausea and vomiting; daily consumption of intravenous morphine; and plasma concentrations of adrenal hormones (cortisol, adrenaline, noradrenaline, and dopamine).

7. Main results

In both upper and lower abdominal surgery groups, postoperative pain was significantly reduced in Arm 1 compared with Arm 2 ($P<0.05$ for both). Morphine consumption decreased significantly over time ($P<0.0001$). Daily consumption of morphine decreased significantly by up to 50% in Arm 1 compared with Arm 2 on postoperative days 1 to 4 ($P<0.01$). The frequency of postoperative nausea and vomiting decreased significantly by up to 20–30% in Arm 1 compared with Arm 2 ($P<0.05$ and $P<0.01$, respectively). Plasma concentrations of cortisol and epinephrine were up to 30–50% lower in Arm 1 than in Arm 2 on postoperative days 0 and 1 ($P<0.01$).

8. Conclusions

Preoperative intradermal needle placement reduces pain, morphine consumption, morphine-induced nausea and vomiting, and sympathetic response after upper and lower abdominal surgery.

9. From acupuncture and moxibustion medicine perspective

The authors mentioned that preoperative acupuncture stimulation is important for obtaining relief of pain, nausea, and vomiting, and that acupuncture on the bladder meridian (gallbladder meridian) may be more useful for suppressing nausea and vomiting than acupuncture at the PC6 (内関).

10. Safety assessment in the article

Not mentioned.

11. Abstractor's comments

This is a very well-designed masked study (patients and evaluators were masked), providing reliable results and conclusions. It would be more complete if it included a flow chart of patient assignment, sample size calculation, intention-to-treat (ITT) analysis, and description of masking status.

12. Abstractor and date

Wakayama I, 9 September 2011.