

19. Post-anesthesia and Postoperative Pain

Reference

Ishimaru K, Sakita M. Effects of acupuncture analgesia on postoperative pain. *Toyo Igaku to Pain Clinic (Oriental Medicine and the Pain Clinic)* 2002; 32(1-4): 10-18 (in Japanese with English abstract). Ichushi WEB ID: 2004115450.

1. Objectives

To evaluate the effects of acupuncture analgesia on postoperative pain.

2. Design

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

3. Setting

Department of Surgery, the Meiji University of Oriental Medicine (current Meiji University of Integrative Medicine) Hospital, Kyoto, Japan.

4. Participants

Twenty-two outpatients who received abdominal surgery under general anaesthesia.

5. Intervention

Arm 1: Electro-acupuncture group. Electro-acupuncture treatment (3 Hz) applied at the LI4 (合谷) and ST36 (足三里) acupuncture points was performed at three hours after surgery for three hours (n=11).

Arm 2: Non-energization group. No needle insertion or energization (n=11).

6. Main outcome measures

β -endorphin and adrenocorticotrophic hormone (ACTH) levels in peripheral blood, subjective pain evaluation.

7. Main results

Post-operative β -endorphin levels were higher than pre-surgery levels in Arm 1 and although they had decreased by three hours after surgery (before electro-acupuncture commenced), they increased again immediately after electro-acupuncture. In contrast, while levels were higher than pre-surgery levels in Arm 2, they continued to decrease linearly with time. There was a significant difference ($P<0.05$) between groups in the levels six hours after surgery (after completion of electro-acupuncture). The average ACTH levels in Arm 1 were 42.8 ± 27.4 pg/mL before surgery, and 335.4 ± 205.7 pg/mL one hour after surgery commenced. In Arm 2, the average ACTH levels were 37.6 ± 19.2 pg/mL before surgery, and 237.1 ± 178.0 pg/mL one hour after surgery commenced. This meant a significant increase ($P<0.01$) from pre-surgery levels in both groups. ACTH levels continued to decrease in both groups after surgery, and no significant difference between groups was found. Painkillers were required for only one of the 11 participants in Arm 1, but they were required for 10 of the 11 participants in Arm 2.

8. Conclusions

Post-operative electro-acupuncture decreases painkiller usage by raising β -endorphin levels.

9. From acupuncture and moxibustion medicine perspective

The trial selected the LI4 (合谷) and ST36 (足三里) acupuncture points, which, as the basic data and the results of surgery during acupuncture anesthesia suggest, offer the most pain relief.

10. Safety assessment in the article

Not mentioned.

11. Abstractor's comments

This interesting study compares the effects of acupuncture analgesia for post-operative pain using the time course of β -endorphin and ACTH levels in blood; it also evaluates painkiller dosage and mentions the mechanism of action of acupuncture analgesia as well as its effects. Unfortunately the envelope method was used for randomization. The control group was described as the "non-energization group," but in fact, no needles were inserted, so "no treatment group" would be a more apt description. This is an important study that suggests the clinical usefulness of acupuncture analgesia. Further examination is desirable.

12. Abstractor and date

Inoue E, 27 January 2010.