

Acupuncture Pain Relief After C-section

Healthcare Institute 2017

Researchers find acupuncture more effective than intravenous sufentanil citrate for the relief of post-C-section pain. Nanyang Wolong District Maternity and Child Health Care Hospital researchers investigated the effects of electroacupuncture (EA) on patients with post-C-section pain in a randomized controlled study. The control group received sufentanil citrate (a potent synthetic opioid analgesic). Sufentanil is stronger than fentanyl and 500 times more potent than morphine. The acupuncture treatment group achieved a total effective rate of 86.7%. The drug control group achieved a 60.0% total effective rate. The total effective rate was based upon a combination of symptomatic relief scores and endogenous biochemical analgesic adaptation to post-surgical recovery.

Acupuncture demonstrated significant subjective and objective improvements, including improvements in systemic analgesic biochemical levels. The contents of blood β -endorphin (β -EP), 5-hydroxytryptamine (5-HT), and prostaglandin E₂ (PGE₂) were evaluated at several data points: prior to EA (T1), 2 hours after the surgery (T2), 12 hours after the surgery (T3), 24 hours after the surgery (T4), and 48 hours after the surgery (T5). β -Endorphin is an endogenous opioid neuropeptide that is associated with pain relief. Studies have shown that β -EP binds to opioid receptors within the central nervous system and peripheral nervous system and produces a pain relieving effect. 5-HT and PGE₂, released by injured tissues, directly target nerve terminal receptors to decrease pain thresholds.

The Visual Analogue Scale (VAS) was adopted to measure pain intensity levels at the T2, T3, T4, and T5 data points. Therapeutic efficacy, safety levels, and adverse reactions were recorded at each data point. The total efficacy evaluation included changes in biochemical levels and VAS scores. The acupuncture total effective rate was 86.7% and the drug total effective rate was 60.0%. The VAS score was significantly better in the acupuncture treatment group than in the drug control group at T2, T3, and T4. The content of plasma β -EP in the acupuncture treatment group was significantly higher compared with that of the control group at T3, T4, and T5. The contents of plasma 5-HT and PGE₂ in the acupuncture treatment group was significantly decreased compared with the control group.

Pain can be a major problem after a C-section. Patients affected by post-C-section pain may endure depression, insomnia, and pathophysiological changes. In addition, post-C-section pain increases the risk for postoperative complications, such as postoperative pneumonia, which consequently influence the long-term prognosis. Effective pain management of post-C-section pain shortens postoperative in-patient care requirements, decreases the risk of postoperative complications, accelerates early recovery, and is cost-effective.

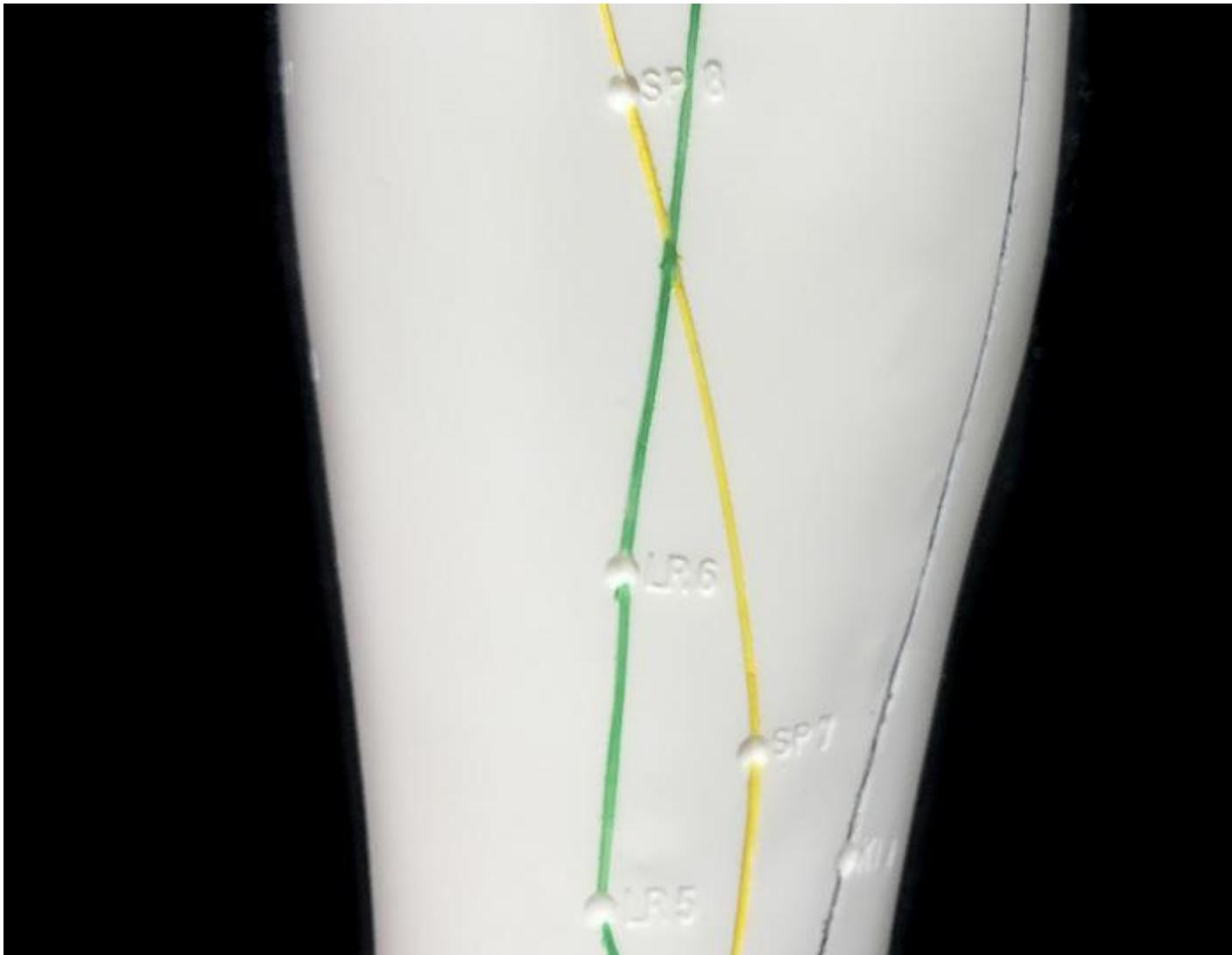
A total of 60 patients receiving C-sections were treated and evaluated in this study. The patients had C-sections between October 2015 and June 2016. They were randomly divided into an acupuncture group and a drug group, with 30 patients in each group. The acupuncture group underwent electroacupuncture and the control group received patient controlled intravenous analgesia (PCIA) with sufentanil citrate.

The statistical breakdown for each randomized group was as follows. The average age in the acupuncture group was 30 (± 5) years. The average weight in the acupuncture group was 72 (± 7) kilograms. The average duration of operation in the acupuncture group was 47 (± 14) minutes. The average age in the medication group was 32 (± 4) years. The average weight in the medication group was 68 (± 8) kilograms. The average duration of operation in the medication group was 54 (± 12) minutes. There were no significant statistical differences in terms of age, weight, and duration of operation relevant to patient outcome measures for patients admitted to the study.

For the control group, participants received the following patient controlled intravenous analgesia (PCIA) with sufentanil citrate: 2 g/kg of sufentanil citrate diluted with 100 ml of 0.9% sodium chloride in a patient controlled analgesia infusion pump. The patients received an intravenous injection of 0.1 ml/kg sufentanil citrate first, and then a patient controlled analgesia infusion pump, for a total of 2 days. For patients with nausea and vomiting after the sufentanil citrate injection, 6 mg of ondansetron (Zofran) was injected. Ondansetron is a medication used to prevent nausea and vomiting. For patients with more severe side effects, including a respiratory rate less than 10 times/min and loss of consciousness, PCIA was immediately stopped. These patients were injected with naloxone, a narcotic antagonist used to reverse the effects of narcotic drugs, and the patients were removed from the experiment. The acupoints used for the treatment group included:

- **ST36 (Zusanli)**

- SP8 (Diji)



SP8 on an acupuncture manikin

Acupuncture treatment commenced 30 minutes after a C-section surgery, with patients in a supine position. A 0.40 mm X 50 mm disposable acupuncture needle was inserted perpendicularly into each acupoint, reaching a depth of 37 mm. After achieving a deqi sensation, both pairs of acupoints were then connected to an electroacupuncture device with a continuous wave. The frequency was adjusted from a low level (minimum 100 Hz) to a high level (maximum 1000 Hz), every 3 minutes, until an intensity level set to patient tolerance levels or until muscle contractions were observable. Once electroacupuncture began, the needles were retained for 30 minutes.

The acupoints used in this study were Zusanli and Diji. The Zusanli acupoint is located on the stomach meridian. This acupoint is traditionally indicated for abdominal pain, vomiting, and abdominal distention. Diji is indicated for abdominal pain. Notably, this acupoint is extremely effective for the relief of menstrual pain. The aforementioned study confirms that acupuncture is safe and effective for the management of post-C-section pain. Compared with the conventional sufentanil drug protocol, the researchers note that “the acupuncture protocol is low-cost, immediately-effective, and drug-free.” Given the results, additional studies are warranted to confirm the findings.