

Acupuncture Therapy for Postoperative Pain with Opioid Sparing

Systematic Reviews and Meta-analyses

Fifteen randomized controlled trials (RCTs) of 1166 patients comparing acupuncture to sham control for acute postoperative pain: before surgery (6 trials), after surgery (7 trials) and before and after surgery (2 trials) with one study treating before surgery and followed for 3-6 days after surgery. Patients receiving acupuncture experienced reduced postoperative pain and the need for analgesics. The morphine sparing effect was 21% at eight hours' post-surgery, 23% at 24 hours' post-surgery and 29% at 72 hours with lowered incidence of opioid-related side effects such as nausea, dizziness, sedation, pruritus and urinary retention.

Sun Y, Gan TJ, Dubose JW, Habib AS. Acupuncture and related techniques for postoperative pain: a systematic review of randomized controlled trials. *Br J Anaesth*. 2008;101:151-160.

Fifty-nine RCTs (n=4,402 patients) indicated that acupuncture point stimulation compared to sham acupuncture or standard treatment improved visual analogue pain scores significantly and reduced total morphine consumption. No serious adverse effects from acupuncture were reported.

Liu XL, Tan JY, Molassiotis A, Suen LK, Shi Y. Acupuncture-point stimulation for postoperative pain control: a systematic review and meta-analysis of randomized controlled trials. *Evid Based Complement Altern Med*. 2015; Article ID 657809.

Meta-analysis of 13 trials and 682 patients comparing acupuncture or related treatment to controls either after surgery (8 trials), before surgery (3 trials), or before and after surgery (2 trials). The meta-analysis of the pooled data showed patients in the experimental group had less post-operative pain and opioid analgesics usage than those in the control group on the first day after surgery. Opioid sparing was on par with the Sun et al. meta-analysis of 21-29%. This meta-analysis did not include trials of auricular therapy.

Wu MS, Chen KH, Chen IF, et al. The efficacy of acupuncture in post-operative pain management: a systematic review and meta-analysis. *PLoS One*. 2016;11:e0150367.

A systematic review and meta-analysis of 17 RCTs (1009 patients) found that peri-operative auriculotherapy (ear acupuncture) for 551 patients compared to sham or standard-of-care controls reduced postoperative pain and need for analgesic use.

Asher GN, Jonas DE, Coeytaux RR, et al. Auriculotherapy for pain management: a systematic review and meta-analysis of randomized controlled trials. *J Altern Complem Med*. 2010;16:1097-1108.

RCTs published since Systematic Reviews and Meta-analyses

Acupuncture was found to be effective, safe, and well-tolerated for post-tonsillectomy pain in children.

Dingemann J, Plewig B, Baumann I, Plinkert PK, Sertel S. Acupuncture in post-tonsillectomy pain: a prospective, double-blinded, randomized, controlled trial. *HNO*. 2017; 65(Suppl 1):73-79.

Intraoperative electronic stimulation of acupuncture points reduced intraoperative opioid requirements, post-operative pain, and duration of post-operative stay in the Post Anesthesia Care Unit.

Huang S, Peng W, Tian X, et al. Effects of transcutaneous electrical acupoint stimulation at different frequencies on perioperative anesthetic dosage, recovery, complications, and prognosis in video-assisted thoracic surgical lobectomy: a randomized, double-blinded, placebo-controlled trial. *Journal of Anesthesia*. 2017;31:58-65.

Acupuncture delivered in hospital after mastectomy reduced pain severity and increased patients' coping abilities.

Quinlan-Woodward J, Gode A, Dusek JA, Reinstein AS, Johnson JR, Sendelbach S. Assessing the Impact of acupuncture on pain, nausea, anxiety, and coping in women undergoing a mastectomy. *Oncol Nurs Forum*. 2016;43:725-732.

Combined therapy

In a randomized trial (n=138) providing massage and acupuncture in addition to usual care decreased pain and depressive mood among postoperative cancer patients when compared with usual care alone.

Mehling WE, Jacobs B, Acree M, et al. Symptom management with massage and acupuncture in postoperative cancer patients: a randomized controlled trial. *J Pain Symptom Manage*. 2007;33(3):258-266.