



A commentary on 'transcutaneous electrical acupoint stimulation for preventing postoperative nausea and vomiting after general anesthesia: a meta-analysis of randomized controlled trials'

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Dear Editor,

One of the most frequently-occurring complications following general anesthesia is postoperative nausea and vomiting (PONV). The estimated incidence in the general population is 25–30%, which can reach 70–80% among high risk patients^[1]. Although often self-limiting, PONV has been reported to be more uncomfortable than postoperative pain. Moreover, PONV has been associated with various postoperative complications, including increased intracranial pressure, fluid and electrolyte imbalance, and wound dehiscence.

Electro-acupuncture was found to be effective in preventing PONV, with needles inserted into acupoints on the body, which were then attached to a device that generates continuous electric pulses using small clips. Electro-acupuncture might result in complications such as needle syncope, pain, and organ puncture. Furthermore, traditional electro-acupuncture using needles is not always convenient or available in all centers. Transcutaneous electrical acupoint stimulation (TEAS) is a noninvasive, safe, and comfortable treatment modality, which combines the effects of transcutaneous electrical nerve stimulation (TENS) with acupuncture point stimulation. TEAS excites the afferent nerves at an acupuncture point with low-voltage impulses. It is based, in part, on traditional Chinese analgesic methods and is known to suppress the transmission and perception of injurious stimuli^[2]. A meta-analysis has been performed by Chen *et al.*^[3] to evaluate the effectiveness of TEAS for preventing PONV after general anesthesia. They concluded that TEAS is a reasonable modality to incorporate into a multimodal management approach for the prevention of PONV.

The Neiguan (PC6) has been widely used for the prevention of PONV because patients can easily stimulate it by themselves, even while wearing an apparatus^[4]. The antiemetic effects of

acupuncture may be attributable to changes in the activity of neurochemicals, including endorphin, serotonin, and norepinephrine, in the central nervous system. When an acupuncture point is stimulated, a low frequency electrical stimulus is generated, which activates the A- β and A- δ fibers, thus releasing endorphins into the central nervous system, which ultimately strengthens the intrinsic antiemetic pathway. Reviewing the manner in which the central serotonin and norepinephrine fibers are activated, it appears that a change occurs in the serotonin transmission pathway, resulting in antiemetic effects. The neurochemicals released by acupuncture point stimulation desensitize the vomiting center in the brain, resulting in the prevention of nausea and vomiting^[5].

In order to integrate PC6 acupoint stimulation into clinical practice and make it part of standard care to prevent PONV, it is important to identify the optimal stimulation type, timing, duration, and intensity. Further research to determine if there is a dose-response relationship between duration of PC6 stimulation and response to intervention is needed. In addition, it is important to conduct research to determine if there are any differences in treatment response in patients undergoing different types of surgery.

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Consent

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Author contribution

Y.W.: write; Y.C.: data collection; J.G.: study design.

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None.

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