

Electroanalgesia: Does It Have a Place in the Routine Management of Acute and Chronic Pain?

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The role of nonpharmacologic analgesic modalities in the treatment of chronic pain syndromes has long been questioned by medical practitioners because of a lack of adequately powered, prospective, randomized, double-blind sham-controlled studies supporting their use in clinical practice (1–3). According to Smith et al. (1) most valid trials with acupuncture for chronic back and neck pain “tended to be negative.” Interestingly, the authors of this systematic review drew their “own conclusions (positive/negative)” based on their interpretation of these data. The article by Sator-Katzenschlager et al. (4) in the current issue of the journal describing a prospective, randomized sham-controlled study involving auricular acupuncture contributes to the growing body of scientific data supporting the use of electroanalgesic modalities in the management of chronic low back pain (CLBP) (5–11).

Analogous to earlier sham-controlled studies involving the use of percutaneous electrical nerve stimulation in the short-term management of CLBP (5–9), Sator-Katzenschlager found significant benefits of electro- (versus manual) acupuncture with respect to lower pain scores, improved “sense of well-being,” physical activity, and quality of sleep, and a reduced need for oral analgesic medication (4). The current investigation extends these earlier studies by also evaluating the longer-term benefits of electroanalgesia in the CLBP population. Of significant importance from the societal perspective, the CLBP patients receiving electrostimulation were able to return to full-time work earlier as a result of their improved quality of life. In a placebo-controlled study, Carlsson and

Sjolund (10) also suggested that electroacupuncture has long-term beneficial effects in patients with CLBP.

The study by Sator-Katzenschlager et al. (4) further documents the advantage of direct electrical (versus mechanical) needle stimulation in enhancing the analgesic benefits of acupuncture in patients with CLBP. In patients with acute pain, the intensity of the electrical stimulus was one of the primary determinants of its analgesic efficacy (12). Interestingly, well controlled studies involving the use of manual intradermal acupuncture needles have also demonstrated impressive benefits in the perioperative setting (13). Although the current study involved the use of an auricular acupuncture point, it is possible that similar results could have been achieved with electrical stimulation at other acupoints (14), and/or specific dermatomes (5–9) corresponding to the patient’s pain symptoms. In fact, it has been demonstrated, using an acute pain model, that identical analgesic benefits can be achieved by stimulating at either an acupoint or the corresponding dermatomal levels (14).

One of the major benefits of the auricular acupuncture device relates to its small size and the ability of the therapy to be administered on an ambulatory basis, obviating the need for frequent clinic visits to receive treatments. Comparative studies are needed to evaluate efficacy of transcutaneous electrical stimulation of the auricular acupuncture point (15) and the percutaneous auricular electroacupuncture technique utilized in the study by Sator-Katzenschlager et al. (4). It will also be important to determine how long the beneficial effects of auricular acupuncture persist after the therapy is discontinued.

Further research is clearly needed to establish the role of simple electroanalgesic techniques such as auricular acupuncture and percutaneous neuromodulation therapy in the multimodal management of acute (15), subacute (16), and chronic pain syndromes (4–11) as well as for treating more serious medical conditions (17). Although auricular acupuncture has been widely used to treat both cocaine and alcohol addiction, recently published randomized, controlled clinical trials

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have failed to demonstrate any clinically-significant benefits of this therapy in improving patient outcome (18–20). Controversy also exists regarding the role of the “placebo” effect of electroacupuncture when it is used to supplement to other analgesic and physiotherapy modalities in the management of CLBP (11,21). Despite lingering skepticism in the medical community (1–3,21), a growing body of scientific data based on carefully conducted prospective, randomized, placebo (or sham) controlled clinical trials (4–11) suggests that electroanalgesic techniques can be valuable adjuncts to conventional medical approaches in the management of CLBP.

In summary, electroanalgesia is likely to become a more widely used adjuvant to other analgesic modalities for the management of a wide variety of acute and chronic pain syndromes (22). Perhaps all patients with pain can live better with electricity!

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