

13. Diseases of the Musculoskeletal and Connective Tissue

Reference

Itoh K, Itoh S, Katsumi Y, et al. A pilot study on using acupuncture and transcutaneous electrical nerve stimulation to treat chronic non-specific low back pain. *Complementary Therapies in Clinical Practice* 2009; 15: 22–5. CENTRAL ID: CN-00681603

1. Objectives

To analyze the synergistic effects of acupuncture and transcutaneous electrical nerve stimulation (TENS) on chronic low back pain (LBP).

2. Design

Randomized controlled trial (RCT).

3. Setting

The Meiji University of Oriental Medicine Hospital, Kyoto, Japan.

4. Participants

Thirty-two LBP patients, 60 years or older, at least six months after onset (12 males, 20 females, ages 61 to 81).

5. Intervention

Arm 1: Acupuncture group. Disposable stainless steel needles (0.2×40 mm, Seirin Co., Ltd.) were inserted into muscle to a depth of 10 mm using the sparrow pecking technique until the patient experienced the *de qi* (得氣) sensation, then retained for at least 10 minutes. The needles were inserted at BL23 (腎俞), BL25 (大腸俞), BL32 (次髎), BL40 (委中), BL60 (崑崙), GB30 (環跳), and GB34 (陽陵泉) acupuncture points. Treatment was given once a week for five weeks (n=8).

Arm 2: TENS group. Surface disposable electrodes (small and large) were placed at and near the most tender points; the pulse rate was set to 122 Hz and intensity was set to two to three times the patient's sensory threshold for 15 minutes. Treatment was given once a week for five weeks (n=8).

Arm 3: Acupuncture + TENS group. TENS was given for 15 minutes, and acupuncture treatment for 15 minutes. The respective treatments were the same as in Arms 1 and 2. Treatment was given once a week for five weeks (n=8).

Arm 4: Control group. Though nonspecific, treatment with topical poultices containing methylsalicylic acid was given, if required (n=8).

Two, one, two and one participants were dropped from Arms 1, 2, 3, and 4, respectively.

6. Main outcome measures

Pain intensity (visual analogue scale [VAS]) score and Roland Morris (Roland-Morris Disability Questionnaire [RMDQ]) score for quality of life (QOL).

7. Main results

The 4- and 5-week VAS scores for Arm 3 and the 5-week RMDQ score for Arm 3 were significantly lower than pre-treatment scores (before-after comparison) ($P<0.008$). The mean 5-week VAS score for Arm 3 was significantly lower than the corresponding score for Arm 4 (comparison between groups). The RMDQ scores after 5 weeks of the treatment for Arm 3 decreased significantly compared to pre-treatment scores (before-after comparison) ($P<0.008$).

8. Conclusions

Acupuncture therapy combined with TENS alleviates pain and improves QOL in LBP patients.

9. From acupuncture and moxibustion medicine perspective

“Gate control” is cited as the mechanism underlying the therapeutic effects of acupuncture with TENS. Since acupuncture excites small-diameter afferent fibers and TENS excites large-diameter afferent fibers, the authors surmise that their combined use is the reason for the effectiveness of the combined treatment against pain.

10. Safety assessment in the article

Not mentioned.

11. Abstractor's comments

This is a very well designed RCT and an important study suggesting the effectiveness of the combined use of acupuncture with TENS. It is also commendable that patients were properly followed up until the fifth week. Interestingly, VAS scores improved about the same amount in the TENS group and the control group, but improved significantly more in the TENS + acupuncture group relative to the control group. This has clinical importance. However, there was no intention-to-treat (ITT) analysis and the results would have been more readily comprehensible if presented in graph form.

12. Abstractor and date

Wakayama I, 23 September 2011.