13. Diseases of the Musculoskeletal and Connective Tissue

Reference

Miyamoto T, Itoh K, Ochi H, et al. The efficacy of acupuncture treatment on pain and ability with osteoarthritis of the knee. - Examination of the curative effect by the depth of an acupuncture needle -. *Zen Nihon Shinkyu Gakkai Zasshi* (*Journal of the Japan Society of Acupuncture and Moxibustion*) 2009; 59(4): 384–94 (in Japanese with English abstract). Ichushi Web ID: 2009340447

1. Objectives

To evaluate the efficacy of acupuncture to different depths on motor function and pain in patients with osteoarthritis of the knee.

2. Design

Randomized controlled trial (RCT).

3. Setting

Department of Orthopaedic Surgery, the Meiji University of Integrative Medicine Hospital, Kyoto, Japan.

4. Participants

Twenty-six outpatients with osteoarthritis of the knee who met certain inclusion criteria such as aged 45 years or older, disease duration for at least 6 months, and not treated knee pain with acupuncture within 6 months.

5. Intervention

Arm 1: Superficial acupuncture group (n=13). Acupuncture needles were inserted about 3 mm into 10 tender points of the lower limb and retained for 10 minutes, once a week for 8 weeks.

Arm 2: Deep acupuncture group (n=13). Acupuncture needles were inserted about 10–20 mm into 10 tender points of the lower limb, with the same intervention duration and frequency as Arm 1.

Three subjects dropped out of the study.

6. Main outcome measures

Knee pain intensity assessed on a visual analogue scale (VAS), performance time for the Timed Up and Go (TUG) Test, 20-m walking time, time for going up and down stairs, and Western Ontario and MacMaster Universities osteoarthritis index (WOMAC).

7. Main results

Treatment significantly improved knee pain intensity (assessed by VAS) compared with baseline in both arms (P<0.05). However, treatment improved TUG score, 20 m walking time, and time of going up and down stairs only in Arm 1 (P<0.05). No significant change in WOMAC score was observed in either arm.

8. Conclusion

Both deep and superficial acupuncture decrease knee pain intensity, but only superficial acupuncture improves motor function.

9. From acupuncture and moxibustion medicine perspective

Ten tender points (in descending order according to pain intensity) in the femoral and leg region were selected for needling. Concordance rate of the tender points and acupuncture points was over 40% in both groups. High concordance rate tended to be observed in the medial part of the knee at points such as SP9 (陰陵泉), LR8 (曲泉), and LR7 (膝関), EX-LE4 (内膝眼).

10. Safety assessment in the article

Not mentioned.

11. Abstractor's comment

This is the first study to compare the efficacy of acupuncture at two depths of needle penetration for pain intensity and motor function, and the result is interesting. By intention to treat (ITT) analysis including patients who dropped out of the trial, superficial acupuncture improved both pain intensity and motor function, which suggests that superficial acupuncture is therapeutically as effective as deep acupuncture. A previous study demonstrated that gentle stimulation (like superficial acupuncture) is more efficient than deep acupuncture in improving motor function, which clarifies the problem with many clinical trials that use minimal acupuncture as the sham acupuncture control. However, in this trial, the evaluation of motor function might have been biased because the person who provided treatment also performed the evaluation. Since no significant inter-group difference was observed, the authors suggest that it would be unwise to conclude the greater effectiveness of superficial acupuncture than deep acupuncture. Controlling for conditions such as masking and the grade of the osteoarthritis of the knee is anticipated to improve the study. In spite of some deficiencies, this study is highly regarded for its focus and demonstration of the possible efficacy of superficial acupuncture.

12. Abstractor and date

Inoue E, 23 November 2010, Furuya E, 24 November 2010, Takahashi N, 25 December 2010.