13. Diseases of the Musculoskeletal and Connective Tissue

References

Ikeuchi T, Kimura A, Sumiya K, et al. Effect of manipulation therapy on delayed onset muscle soreness (DOMS). *Nihon Toyo Igakkai Shorokushu* (*Proceedings of the Japan Society for Oriental Medicine*). 2008; 25: 46 (in Japanese). Ichushi Web ID 2008255553

Ikeuchi T, Sumiya K, Odahara Y, et al. Effect of manipulation therapy on delayed onset muscle soreness (DOMS). *Toho Igaku* (*Eastern Medicine*) 2009; 24(4): 11–18 (in Japanese with English abstract).

1. Objectives

To evaluate the effectiveness of manual therapy for delayed onset muscle soreness (DOMS).

2. Design

Randomized controlled trial (RCT).

3. Setting

Not described, Japan.

4. Participants

Twelve healthy male students (mean age ± SE: 18.8±1.3 years).

5. Intervention

Participants repeated 3 sets (30-second intervals) of 10 eccentric elbow flexor contractions (angular velocity: 60 deg/sec) at a maximum force of 100%.

Arm 1: Manual therapy group: One-minute effleurage of the elbow flexors, then 10-minute petrissage and one-minute effleurage (n=6).

Arm 2: Control group: No treatment (n=6).

6. Main outcome measures

Visual Analogue Scale (VAS) pain score, tenderness (algometer), muscle rigidity (Venustron).

7. Main results

VAS pain scores from day 3 to day 6 were 19.5, 13.7, 8.2, and 2.8 in Arm 2 and high (54.2, 44.8, 27.3, and 12.5) in Arm 1. Mean tenderness threshold scores were lower in Arm 1 than Arm 2 from day 3, and muscle rigidity scores were slightly higher in Arm 1.

8. Conclusions

Manual therapy for DOMS after exercise intensifies pain.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

This very interesting study suggests the possibility that manual therapy (effleurage and petrissage) for DOMS after exercise intensifies pain. The study was well designed, particularly the outcome measures, which included subjective (VAS) and objective (tenderness threshold score, etc.) measures over a long enough period to detect changes over time. Yet, the sample size was small, and the authors did not indicate the intensity of DOMS, the methods or extent of the manual treatment, or any significant differences in tenderness thresholds. Although the abstract form may limits the amount of detail that can be presented, the authors should have described the manual therapy methods because the effects on intramuscular circulation and the amount of stimulation depend on whether the thumb or grasping is used in the petrissage, and whether the petrissage movements are linear or circular. Possibly, pain was intensified in this trial because excessive force was used in the effleurage and petrissage. The authors do not discuss these parameters, so it is difficult to find adequate evidence for their thesis that manual therapy for DOMS is harmful (i.e., causes microscopic tissue damage and increases inflammation). On the other hand, given the current lack of articles presenting a high level of evidence that manual therapies for DOMS are effective or harmful, the findings suggested in this study are highly significant. Hopefully researchers will investigate this topic and follow-up this study to provide better treatment and better protection of people who participate in sports.

11. Abstractor and date

Fujii R, 8 December 2010.