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Title of Abstract Muscular ischemic compression vs. cervical spine manipulation techniques: effects on pressure pain threshold in the trapezius muscle

Text of ABSTRACT

Introduction

Myofascial trigger points (MTPs) are common and are of interest for manual therapists in the management of musculoskeletal system pain. Latent MTPs are a problem frequently detected in the shoulder muscles. Many studies have shown that manual techniques can significantly modify pressure pain threshold. The techniques examined have differing side-effects, and therefore risk-benefit analysis seems appropriate. The aim of this study was to compare the short-term effects of these two manual techniques, which are based on different theoretical physiological mechanisms, on the MTPs in the upper trapezius muscle.

Materials/Methods

Volunteers underwent a screening experiment to establish both the presence of MTP in the trapezius muscle and the presence of somatic dysfunction at the C3/C4 level. 81 subjects were divided randomly into three groups: a manipulation group, an ischemic compression group and a control group with a sham technique. The outcome measure was the pressure pain threshold on the MTP in the trapezius muscle detected using a pneumatic pressure algometer. This measurement was taken prior to, and then 1, 5, and 10 minutes after treatment. The repeated measures ANOVA test, the Bonferroni test and the Kruskal-Wallis test to compare groups were used.

Results

Analysis of variance showed a significant effect over the time period for the control group ($p=0.003$), for the HVT manipulation group ($p=0.0006$) and for the ischemic compression group ($p=0.0353$). HVT techniques and ischemic compression had a positive effect on pain threshold in the short-term. Comparison of the groups revealed no significant differences between the first and second measurements ($p=0.59$), the first and third measurements ($p=0.07$), or the first and fourth measurements ($p=0.77$).

Conclusions

This results of this study do not allow us to conclude that the benefits of ischemic compression and HVT technique are any greater than those of the sham technique.

As both of the study techniques can be adopted to alter pain threshold, ischemic compression is the better suited to patients with contraindications to cervical spine manipulation. Local and remote manual techniques based on different theoretical physiological mechanisms are thought to modify the pressure

pain threshold of the MTP, but further study is required.

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