P86 - THE IMMEDIATE EFFECT OF MULTIPLE MECHANICAL IMPULSES ON ELECTROMYOGRAPHY AND PAIN PRESSURE THRESHOLD OF LUMBAR LATENT TRIGGER POINTS: AN EXPERIMENTAL STUDY

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Introduction: Myofascial pain is a common syndrome, which has not been studied extensively in

the low back. Despite a variety of manual and instrument assisted interventions available, little work has targeted the possible effects of fast mechanical impulses on myofascial trigger points (MTrPs) with regards to its sensitivity and electrical activity.

Purpose: The purpose of this experimental study was to quantify the immediate effect of one session of fast repeated mechanical impulses of 200N to latent MTrPs and to normal muscle tissue with pressure pain threshold (PPT) and surface electromyography (sEMG) as outcome measures.

Methods: In 41 asymptomatic subjects between 17-40 years of age the lumbar musculature was searched for a latent MTrP by a trained clinician. Using 3 disposable pre-gelled electrodes bilaterally, sEMG was recorded continuously from muscle containing either latent or no MTrP. Both the trigger point group and control group received the intervention and were blinded to group allocation. The immediate effect of mechanical impulses was assessed by sEMG and PPT before and after intervention using Wilcoxon matched-pairs signed-ranks test, Mann-Whitney U test and paired t-tests.

Results: The PPT increased significantly across both groups ($p < 0.01$) after intervention. The proportionate increase (14.6%) was comparable in both MTrP and control groups. The electrical activity on the MTrP side was not significantly higher in the MTrP group compared to the contralateral side. The decrease of resting electrical activity after intervention was significant in the MTrP group on the side of the latent MTrP ($P = 0.001$) as well as the contralateral side ($p=0.022$), and not significant in the control group on either side ($p=0.33$ and $p=0.93$).

Conclusion: In this study, the immediate effect of one session of mechanical impulses was associated with a significant increase in PPT for both groups and a significant decrease in the resting electrical activity of the lumbar muscles only in the MTrP group. It is unknown if these effects have clinical significance.

Keywords: low back pain, myofascial pain syndromes, trigger points, electromyography, pain threshold

Conflicts of Interest: none