Comparison of Effectiveness of Different Stretching Exercises Combined with Pressure Release Technique on Latent Trigger Points in the Pectoralis Minor Muscle

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Background: A myofascial trigger point (MTrP) is a hyperirritable spot located in a palpable taut band of skeletal muscle which are painful upon compression, stretching, or overload of the muscle. It is well known that latent triggerpoint (LTrPs), highly prevalent in healthy subjects, are usually silent even though they can easily develop into ATPs under the influence of perpetuating factors; therefore LTrPs need to be treated.

Objectives: To investigate which type of stretching exercise using after a single-session ischemic compression is more effective for muscle length, pressure pain threshold (PPT), pulmonary function, and respiratory muscle strength in subjects with latent trigger point in the pectoralis minor (PM) muscle.

Methods: Two-hundred-six individuals were screened for possible inclusion criteria. Forty subjects were randomized to the Group-1 (ischemic compression with static stretching), Group-2 (contract-relax PNF stretching), Group-3 (ischemic compression with static stretching), Group-3 (ischemic compression with myofascial release) or Group-4 (no intervention). The assessments were performed at baseline, immediately after the intervention, and at 24-hours later. The pectoralis minor length (PML) was measured using a standard tape measure. Then, pectoralis minor index (PMI) was calculated. Rounded shoulder posture (RSP) was assessed by measuring the distance between the posterior border of the acromion and the clavicle. A digital algometer was used to evaluate the PPT: spirometer and respiratory pressure meter were used to assess pulmonary function and maximal respiratory pressure, respectively.

Results: Improvements were found for PML and PMI between baseline and immediately after intervention in Group-1 and Group-3 (p<0.05). RSP showed a significant improvement only in Group-3 (p<0.00), whereas there was a statistically significant improvement for PPT value in Group-1 immediately after intervention (p<0.005). Significant difference were found in the PEmax at baseline to 24-hours later in Group-1 (p<0.05). There was a statistically significant difference in the PEmax and PMax in Group-3 (p<0.05).

Conclusions: For effective trigger point therapy, ischemic compression should be followed by myofascial release or contract-relax PNF stretching exercises.