ABSTRACT

Background: Shoulder pain affects up to 67% of the population at some point in their lifetime with subacromial pain syndrome (SAPS) representing a common etiology. Despite a plethora of studies there remains conflicting evidence for appropriate management of SAPS.

Purpose: To compare outcomes, for individuals diagnosed with SAPS, performing a 6-week protocol of eccentric training of the shoulder external rotators (ETER) compared to a general exercise (GE) protocol.

Study Design: Randomized controlled trial

Methods: Forty-eight individuals (mean age 46.8 years +/-17.29) with chronic shoulder pain, and a clinical diagnosis of SAPS were randomized into either an experimental group performing ETER or a control group performing a GE program. The intervention lasted for six weeks, and outcomes were measured after three weeks, six weeks, and again at six months post intervention.

Results: The primary outcome of function, measured by the Western Ontario Rotator Cuff Index, demonstrated a significant interaction effect derived from a multilevel hierarchical model accounting for repeated measures favoring the experimental group at week 3: 14.65 (p=.003), Week 6: 17.04 (p<.001) and six months: 15.12 (p=.007). After six months, secondary outcome measures were improved for Numeric Pain Rating Scale levels representing pain at worst (p=.006) and pain on average (p=0.02), external rotator (p<.001), internal rotator (p=0.02), and abductor strength (p<.001). There were no statistically significant differences in secondary outcome measures of Global Rating of Change, Active Range of Motion, the Upper Quarter Y Balance Test and strength ratios after six months.

Conclusion: An eccentric program targeting the external rotators was superior to a general exercise program for strength, pain, and function after six months. The findings suggest eccentric training may be efficacious to improve self-report function and strength for those with SAPS.

Level of Evidence: 2b

Key Words: Eccentric Training, shoulder exercise, subacromial pain