

ORIGINAL RESEARCH

THE EFFECT OF AXIOSCAPULAR AND ROTATOR CUFF EXERCISE TRAINING SEQUENCE IN PATIENTS WITH SUBACROMIAL IMPINGEMENT SYNDROME: A RANDOMIZED CROSSOVER TRIAL

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ABSTRACT

Background: While physical therapy is an effective element in the rehabilitation of rotator cuff (RC) disease, the most effective sequence of exercise training interventions has not been defined.

Hypothesis/Purpose: The purpose of this study is to determine if there is a difference in pain or function in patients who are given RC strengthening prior to or after initiating scapular stabilization exercises.

Study Design: Level I randomized crossover trial

Methods: This was a prospective study of 26 men and 14 women with a mean age 51 who were diagnosed with subacromial impingement syndrome (SAIS). They were randomly assigned to one of two groups for a comprehensive and standardized rehabilitation program over six visits at an orthopedic outpatient clinic. One group was prescribed a 4-week program of scapular stabilization exercises while the other group began with RC strengthening exercises. The crossover design had each group add the previously excluded four exercises to their second month of rehabilitation.

Results: The results showed significant improvements in pain ($p < 0.001$), function ($p < 0.001$), and patient satisfaction ($p < 0.001$) at all follow-up times for both groups. There was not a statistically significant difference in pain or function at any follow-up period for initiating one group of exercise before the other ($p > 0.05$). There was a statistically significant interaction between the patient's global rating of change at the 4 week follow-up as compared to 8 weeks ($p = 0.04$) or 16 ($p < 0.001$).

Conclusion: Patients with SAIS demonstrate improvement in pain and function with a standardized program of physical therapy regardless of group exercise sequencing.

Level of Evidence: 1b

Keywords: Rotator cuff training, scapular stabilization, shoulder physical therapy

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