

A Comparison of Supervised Machine Learning-Based Biofeedback Training and Home-Based Exercise Training for Patients with Adhesive Capsulitis

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Abstract

Introduction: adhesive capsulitis, which is also referred to as frozen shoulder. this study aims to compare efficacy of supervised machine learning-based biofeedback training compared to home-based exercise training for patients with adhesive capsulitis.

Methods: in this study, patients with complaints related to frozen shoulder were selected. a total of 20 patients aged between 40 and 65 years participated in the study. group 1 treated with home based exercise training and group 2 patients treated with supervised machine learning-based biofeedback training. they were followed upon weekly for the first 6 weeks and at 2 months and 6 months. Group 2 patients were given supervised machine learning-based biofeedback training in aroleap from week 2. (3 sessions, each for 15-20 mins).

Results: after 3 months of treatment in group 1 there were increases in active range of motion. mean abduction increased from 95 degrees to 108 degrees, mean forward flexion increased from 101 degrees to 115 degrees and mean external rotation of shoulder increased from 12 degrees to 22 degrees. in group 2 mean abduction increased from 101 degrees to 122 degrees, mean forward flexion increased from 102 degrees to 130 degrees, mean external rotation of the shoulder increased from 13 degrees to 30 degrees and mean internal rotation from 12 degrees to 33 degrees.

Conclusion: a supervised machine learning-based biofeedback training in aroleap exercise can produce a superior effect on recovery from a frozen shoulder and is more effective than home-based exercise training.