

# Hemiparetic Shoulder Pain Syndrome Treated with Deep Dry Needling During Early Rehabilitation: A Prospective, Open-Label, Randomized Investigation

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## Abstract

**Objectives:** The purpose of the trial was to evaluate the efficacy of dry needling of myofascial pain syndrome trigger points to relieve the hemiparetic shoulder pain resulting from a cerebrovascular accident [CVA, stroke].

**Methods:** A prospective, randomized, comparison cohort investigation was performed in the setting of a large inpatient rehabilitation unit with 400 admissions [mainly CVA or head injury] annually. Potential study subjects, who complained of shoulder pain on the hemiparetic side, were enrolled and randomly assigned to standard rehabilitation treatment plus deep dry needling [Group 1] or to standard rehabilitation treatment alone [Group 2]. The Rivermead Motricity Index was used to assess the motility on admission and discharge, and to calculate the percentage of potential improvement achieved during rehabilitation [effectiveness and efficiency]. A Pain Visual Analog Scale was used to serially assess pain. At the end of the trial, a self-report questionnaire evaluated whether patients could rest for a longer period of time in a wheelchair and sleep better in bed than they could before treatment.

**Results:** One hundred and one CVA survivor patients entered the study. Those receiving dry needling, in addition to standard rehabilitation therapy, reported significantly less pain during sleep and physiotherapy. Their sleep was also more restful than that of the non-neededled control subjects. The patients treated with dry needling reported a significant reduction in the frequency and intensity of pain and a reduction of pain during daytime and rehabilitation exercises in comparison to the standard therapy alone control group. A statistically significant inverse correlation was found between shoulder pain and mobility.

**Conclusions:** The results indicate that combining dry needling of trigger points with standard rehabilitative therapy may improve the outcome of hemiparetic shoulder pain syndrome. It decreased the severity and frequency of the perceived pain, reduced the use of analgesic medications, restored more normal sleep patterns, and increased compliance with the rehabilitation program.

**Keywords:** Myofascial pain syndrome; shoulder pain; deep dry needling; cerebrovascular accident; rehabilitation