



# Effect of NSAID Administration with Intra-Articular Corticosteroid Injection on Pain and Range of Motion in Patients with Incomplete Rotator Cuff Tears

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## ABSTRACT

**Introduction:** Rotator cuff (RC) injuries are a common occurrence that affects many people globally. When the shoulder joint undergoes degenerative changes or trauma, rotator cuff damage occurs, leading to pain, stiffness, reduced function, and joint mobility. Most patients with rotator cuff injuries experience gradual and progressive shoulder pain, weakness, and a decreased range of active shoulder movements. This study compares pain improvement and range of motion in patients with incomplete rotator cuff tears after NSAID administration versus intra-articular corticosteroid injection.

**Methods and Materials:** This research is a randomized clinical trial. The study population comprises individuals experiencing glenohumeral pain due to incomplete rotator cuff tears. The study sample was drawn from patients referred to Shariati Hospital in Isfahan in 1401 with rotator cuff tears. After obtaining approval from Najaf Abad Azad Medical University. An orthopedic doctor's opinion confirmed the diagnosis of a rotator cuff tear. Patients were randomly assigned to two groups: one received non-steroidal anti-inflammatory drugs to alleviate pain from incomplete rotator cuff tears, and the other received intra-articular corticosteroid injections. Demographic information was collected using a checklist. Patients were followed up at the 4<sup>th</sup>, sixth, and eighth weeks after treatment to assess pain improvement. Treatment outcomes were evaluated by examining patients, assessing range of motion (ROM) and shoulder strength, and measuring shoulder pain using a Visual Analog Scale (VAS). Data were compared using the chi-square test and ANOVA.

**Results:** In this study, 60 patients were enrolled (30 in the intra-articular corticosteroid injection group and 30 in the NSAID group). Among these patients, 34 (56.87%) were women and 26 (43.3%) were men. The mean age of the participants was  $50.97 \pm 12.18$  years (range 25-70 years), with no statistically significant difference in mean age between the two groups ( $P=0.05$ ). Similarly, the two groups' mean range of abduction motion showed no statistically significant difference during the 8-week follow-up period ( $P=0.05$ ). The mean range of external rotation motion in the two groups also did not present a statistically significant difference during the eight-week follow-up period ( $p = 0.05$ ). Furthermore, the frequency of daily functional impairment and pain following the 8-week follow-up did not reveal any statistically significant difference between the two groups ( $p = 0.05$ ). The findings indicated no significant difference in pain and range of motion between the two methods at the end of week.

**Conclusion and Discussion:** The results suggest that intra-articular corticosteroid injection and NSAID administration can effectively improve pain in patients with mild rotator cuff tears, with no superiority of one method.

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