A single sub-acromial injection of NSAID (Ketorolac) can be more effective than a single corticosteroid injection (Triamcinolone) in the treatment of External Shoulder Impingement Syndrome while decreasing the potential side effects of corticosteroids.

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(Level 2 evidence)

Inclusion criteria:
- Shoulder pain with passive and/or active abduction in 60°-120° arc of motion
- Positive Neer’s test
- Positive Kennedy-Hawkins test
- Diagnosis of subacromial bursitis based on tenderness to palpation antero-lateral to the acromion

Was the assignment of patients to treatments randomized? Yes. 24 patients were randomized to the corticosteroid group and 24 patients to the NSAID group.

Were the groups similar at the start of the trial? Yes. The 2 groups were comparable with respect to age, gender and laterality. In addition patients in both groups scored similarly on the UCLA Shoulder Rating Scale.

Aside from the allocated treatment, were groups treated equally? Yes. Patients in both groups filled out the UCLA Shoulder Rating Scale and a VAS. A hand held goniometer was used to measure their pre-treatment shoulder ROM (flexion and abduction). After the initial evaluation all qualifying patients received a subacromial injection using a postero-lateral approach and the needle was directed towards the coracoid process.

Were all patients who entered the trial accounted for: Yes. 24 patients completed the study. In addition, 10 patients were lost for follow up (7 in the Steroid group and 3 in the NSAID group). In addition, one patient’s consent expired (steroid) and 5 patients were later diagnosed with a RC tear (MRI) (1 steroid and 4 NSAID). An Intent-to-treat analysis was not performed.

Were the patients and clinicians kept “blind” to which treatment was being received? Yes. This was a double blinded randomized clinical trial. Pre-prepared, unlabeled, unidentifiable syringes were used.

Were measures objective? Yes. The UCLA Shoulder Rating Scale and VAS were used.

How large was the treatment effect? Both groups demonstrated improved outcome measures at the 4 week follow up. The Ketorolac group scored significantly better on the UCLA Shoulder Outcome measure: 7.5 for the NSAID group versus 2.13 for the steroid group. Active abduction increased to 151º for the NSAID group versus 134º. This difference was statistically significant (P=.03).

This study provides evidence that injectible NSAID’s yield equal if not superior results as compared to corticosteroid injections without the risks of cortisone injections. The authors are unaware of any study that demonstrates adverse effects from injectible NSAID’s. They also reference a study that compared injectible NSAID’s with placebo that concluded that 4x weekly injections of Tenoxicam was superior to placebo injections (1). The authors noted several limitations of their study.

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References