The Effectiveness of Oral Non-Steroidal Anti-Inflammatories versus Steroid Injections in Patients with Shoulder Pain

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The Effectiveness of Oral Non-Steroidal Anti-Inflammatory Drugs Versus Steroid Injections in Patients with Shoulder Pain

Darren Pledger PT, DPT, PA-S

Statement of the Problem

• The fact that shoulder pain is the third most common musculoskeletal complaint in primary care shows that clinicians must have an arsenal of quality interventions to treat this problem.
• The need for quality research and evidenced based guidelines are necessary to educate clinicians on their treatment options, the efficacy of those treatments, and their safety profiles.

Research Questions

1. In patients with shoulder pain, is oral non-steroidal anti-inflammatory or corticosteroid injections into the glenohumeral joint more effective in reducing shoulder pain?

2. What are the risks and side effects of oral non-steroidal anti-inflammatory or corticosteroid injections into the glenohumeral joint when used to treat shoulder pain?

Literature Review

Theme 1 - Adebajo, Nash, and Hazleman (1990) found both oral NSAIDs (p=0.0268) and triamcinolone injection are superior to placebo with the steroid injection group achieving the greatest results.

• Berry, Fernandes, Bloom, Clark, and Hamilton (1980) found that all groups showed statistically significant improvement in pain and range of motion but no significant difference between groups with no distinct advantage of any treatment.

• Petri, Dobrow, Neiman, Whiting-O’Keefe, and Seaman (1987) found that steroid injection (p=0.00005) and oral NSAIDs (p=0.06) were statistically superior to placebo and that there was no statistical significance of combined treatment compared to steroid injection alone.

Theme 2 - Nissen et al. (2016). Precision Trial, found statistically significant results that there is no greater cardiovascular risk from celecoxib when compared to naproxen or ibuprofen.

• Castellsague et al. (2012), for individual NSAID use, they determined that ibuprofen was in the lowest range of pooled RRs while naproxen was associated with higher RR values depending on certain doses.

• Zhang, Doman, Bell, and Guthrie (2017) found that taking aspirin with selective NSAIDs virtually cancels out their gastroprotection effect (Garcia Rodriguez & Barrales Tolosa, 2007).

• Non-selective oral NSAIDs pose the greatest risk followed by selective oral NSAIDs. Although selective oral NSAIDs were found to decrease the risk of upper gastrointestinal complications, they found that taking aspirins with selective NSAIDs virtually cancels out their gastroprotective effect (Garcia Rodriguez & Barrales Tolosa, 2007).

Discussion

• Many of the studies comparing corticosteroids to oral NSAIDs yielded similar results (Berry et al., 1980; Deghan et al., 2013; Petri et al., 1987; Ranalletta et al., 2016; Sun et al., 2015).

• Two studies found that corticosteroids and oral NSAIDs are both superior to placebo in treating shoulder pain (Adebajo et al., 1990; Petri et al., 1987).

• Three studies found with statistical significance, that corticosteroids accelerate pain relief when compared to oral NSAIDs but long-term pain relief was equivocal (Deghan et al., 2013; Ranalletta et al., 2016; Shin & Lee, 2013).

• Many of the studies in theme one had very small sample sizes.

• There is a small amount of literature directly comparing oral NSAIDs to corticosteroids, which is lacking consistency.

• Many studies in theme one were dated.

• There is a risk for upper gastrointestinal complications (Castellsague et al., 2012; Chang et al., 2011; Garcia Rodriguez & Barrales Tolosa, 2007; Rostom et al., 2011; Nissen et al., 2016).

• All NSAIDs pose a risk to the kidney and AKI is possible in healthy populations as well as the elderly (Chou et al., 2016; Zhang et al., 2017).

Conclusion

• Both oral NSAIDs and corticosteroid injection are effective in reducing shoulder pain.

• Both treatments can treat a wide range of conditions.

• Both are superior to placebo while neither is superior to the other, thus the decision on what treatment to use should be based on an individuals comorbidities and risk factors.

• There are side effects associated with both treatments.

References


