

Physiotherapy and injection better than injection alone or physiotherapy alone for improving range of motion in adhesive capsulitis

Synopsis

Summary of Carette S, Moffett H, Tardif J, Bessette L, Morin F, Fremont P, Bykerk V, Thorne C, Bell M, Bensen W and Blanchette C (2003): Intraarticular corticosteroids, supervised physiotherapy, or a combination of the two in the treatment of adhesive capsulitis of the shoulder. *Arthritis and Rheumatism* 48: 829-838. [Prepared by Chris Maher, Editorial Board member.]

Question: Is intraarticular corticosteroid injection and/or physiotherapy more effective than placebo in improving pain and function in patients with adhesive capsulitis? **Design:** Randomised controlled trial with concealed allocation and intention to treat analysis. **Setting:** Canadian outpatient rheumatology clinic. **Patients:** Ninety-seven subjects were enrolled. Inclusion criteria included: limitation of both passive and active movements $\geq 25\%$ in at least two directions, symptomatic for < 1 year, Shoulder Pain and Disability Index (SPADI) score ≥ 30 . Ninety-three patients completed the baseline assessment, 87 the six-week follow-up, 86 the 3 month follow-up, 82 the 6-month follow-up and 77 the 12-month follow-up. **Interventions:** Twenty-five patients were allocated to the steroid injection group, 23 to the placebo injection group, 27 to the physiotherapy group and 22 to the combined physiotherapy and steroid injection group. All patients were taught a home exercise program. Active and placebo injections were performed under fluoroscopic guidance with the radiologist blinded to contents of syringe. Physiotherapy commenced one week after injection and consisted of 12 1-hour sessions over 1 month. Patients with 'acute' capsulitis received treatment that aimed to relieve pain, increase range and function and included transcutaneous nerve stimulation, mobilisation techniques, active ROM exercises and ice applications. Patients with 'chronic' capsulitis received treatment that aimed to increase range, strength and function and included ultrasound, active and auto-assisted ROM exercises, isometric strengthening exercise and ice application. **Outcomes:** The primary outcome was the SPADI (range 0-100). Secondary outcomes included active and passive ROM measured by a blinded observer. **Result:** For the SPADI outcome at six weeks the group mean (95% CI) treatment effects were: combined vs placebo 27.7 (13.2 to 42.1); steroid injection vs placebo 17.8 (3.7 to 31.9); physiotherapy vs placebo 3.4 (-10.4 to 17.1). The treatment effects for active total ROM at six weeks were combined vs placebo 59.0 (32.7 to 85.4); steroid injection vs placebo 27.6 (1.6 to 53.6); physiotherapy vs placebo 15.5 (-9.7 to 40.8). **Conclusion:** In patients with adhesive capsulitis, steroid injection and physiotherapy are both more effective than placebo in improving pain, disability and ROM. A combination of both treatments is more effective in improving ROM than injection alone. Physiotherapy alone is no more effective than placebo.

Commentary

Adhesive capsulitis is a common cause of shoulder pain estimated to affect 2-5% of the general population (Anton 1993, Lundberg 1969). It is characterised by spontaneous onset of shoulder pain and progressive stiffness of the glenohumeral joint accompanied by significant disability (Croft et al 1993, Neviasser 1987).

Carette et al have undertaken a methodologically rigorous randomised controlled trial comparing four groups: (1) Intra-articular corticosteroid injection under fluoroscopic control. This is important as in clinical practice, injection is often given without the benefit of imaging and, as the paper states, up to 60% of 'unguided' injections may not be placed accurately; (2) Physiotherapy including mobilisation, electrotherapy and exercise (a combined intervention consistent with current practice); (3) Injection plus physiotherapy; and (4) Placebo.

The study concludes that fluoroscopic-guided steroid injection with physiotherapy provides the best pain and disability improvements in the short term, but over the longer term, all patients will improve. Steroid injection alone also provided significant short term benefit, but not as great as the combination group. Problems with recruitment and follow-up (particularly in the physiotherapy only group) may have biased the conclusions of this study. As well, the study only had sufficient statistical power to detect between group differences in the SPADI > 20 units, whereas earlier studies have demonstrated that a change of 10 units on the SPADI is clinically significant (Williams et al 1995). However, the conclusion that physiotherapy alone is no more effective than placebo is consistent with other evidence from randomised controlled trials and supports physiotherapy as useful in adhesive capsulitis only when combined with another intervention (Green et al 2003).

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References

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