

**Tonks JH, Pai SK, Murali SR. steroid injection therapy is the best conservative treatment for lateral epicondylitis: a prospective randomised controlled trial. In J Clin Pract 2007;61(2):240-246.**

Design: Randomized clinical trial

Brief summary of study:

- 48 patients (mean age 44, no information on sex) with clinical diagnoses of lateral epicondylitis were treated at an orthopedic department in the UK
- Eligible for inclusion if they had not had treatment in the past 6 months and were over 18
- Ineligible if they had trauma in past 6 weeks, previous elbow surgery, elbow instability, cervical spine pathology, already taking systemic steroids, bilateral symptoms, or contraindications to injection therapy (bleeding diatheses, poorly controlled diabetes or immunosuppression, etc)
- Block randomized into 4 groups of 12 patients each: observation only, steroid injection only, physical therapy only, or combination of steroid injection and physical therapy
- Steroid injection consisted of one injection of 1 ml with 10 mg triamcinolone and 2% lidocaine
- PT consisted of progressive, slow, repetitive wrist and forearm stretching and muscle conditioning
- Outcomes were measured at baseline and at 7 weeks
- Main outcome was pain-free grip strength; this improved significantly more in the steroid group than in the PT group and the observation; the combination of PT and steroid was not better than steroid alone (i.e., no interaction observed)
- Similar pattern was seen for other outcomes: a patient-rated functional and pain questionnaire and for extensor weight strength (how much weight the patient can lift when the forearm is supported on a table): steroid injection improved more than PT and observation only; the combination of PT and steroid did no better than steroid alone

Authors' conclusions:

- Steroid injection is significantly more effective than PT or observation only, and the combination of PT and steroid was not better than steroid alone
- These conclusions must be qualified by the high attrition rate (only 8 of the 12 PT patients and 7 of the combination PT/steroid patients had outcomes measured at 7 weeks)

Comments:

- The authors point out the main limitation to the study: the large attrition in the PT groups (all 12 of the steroid injection and 10 of the 12 observation only patients were followed up at 7 weeks)
- The description of the PT is sketchy, and refers to a 1996 article which randomized 20 patients to PT and had complete follow-up at 8 weeks

- This raises a question about the administration of the PT, which may have departed from the program that the PT program was originally described in
- Interaction terms in ANOVA have larger variances and therefore require larger sample sizes than for main effects; therefore, the study was badly underpowered to study the combination of steroid injection and PT
- A 7 week study period showing an advantage of steroid injection is consistent with a short-term advantage, but is not enough observation time to compare longer-term outcomes

Assessment : Inadequate for stating that a combination of steroid and PT is no better than steroid injection alone (high attrition, inadequate description of how the PT program was administered, short observation time)