

Smidt N, van der Windt D et al. Corticosteroid injections, physiotherapy, or a wait-and-see policy for lateral epicondylitis; a randomised controlled trial. Lancet 2002;359:657-662.

Design: Randomized clinical trial

Population/sample size/setting:

- 185 patients (93 women, 92 men, median age 47) with lateral epicondylitis recruited from primary care practices in the Netherlands
- Inclusion criteria were at least 6 weeks of pain in lateral elbow exacerbated by pressure on lateral epicondyle and with resisted dorsiflexion of wrist, age 18-70, and ability to communicate in Dutch
- Exclusion criteria were extensive and included treatment with PT or injections in previous 6 months, bilateral elbow symptoms, evidence of another cause of elbow pain (e.g., cervical radiculopathy), elbow surgery or deformity, or recent (12 months) dislocation, fracture, or tendon rupture

Main outcome measures:

- Concealed block randomization done into three treatment groups: wait-and-see policy (n=59), corticosteroid injection (n=62), or PT (n=64)
- Intervention period lasted 6 weeks, with outcome assessments made at baseline, at 3 weeks after randomization, and again at 6, 12, 26, and 62 weeks
- Wait-and-see group visited their family doctor once during the 6 week intervention period, and received ergonomic advice, acetaminophen, and NSAID prn, but were otherwise encouraged to await spontaneous improvement
- Corticosteroid group was injected by their family doctors with triamcinolone (up to 10 mg) and lidocaine with local infiltration at every tender point until pain was abolished; the amount of fluid remaining in the syringe was recorded, and a maximum of 3 injections was recommended during the 6 week intervention period
- PT consisted of 9 treatments of pulsed ultrasound, deep friction massage, and an exercise program for 6 weeks using home exercise equipment and an instruction book
- Primary outcome measures were severalfold: general improvement as reported by the patient, severity of chief complaint, inconvenience, and elbow disability
- At 6 weeks, steroid injection appeared superior to PT and to wait-and-see; success was reported by 92% of injection group, 47% of PT group, and 32% of wait-and-see group
- However, superiority of steroid injection was short term; at 26 and 52 weeks, PT appeared superior to steroid, with success rates at 52 weeks being 91% for PT, 83% for wait-and-see, and 69% for steroid injection
- PT showed better results on most outcomes than wait-and-see, but the differences were small and not statistically significant
- Adverse events were common but mild

Authors' conclusions:

- In short term, steroid injection is superior to PT and wait-and-see
- Benefit of steroid injection does not persist past 12 weeks; PT appears to be best option at 52 weeks, followed by wait-and-see and steroid injection
- Poor long-term outcome of steroid injection is associated with a high rate of recurrences and high frequency of additional treatment; possibly, steroid injections harm the tendon or lead patients to overtax the tendon

Comments:

- Presentation of multiple outcome measures in Table 3 is somewhat cumbersome and overly detailed; the success rate, as determined by self-rating of "completely recovered" or "much improved" was used as the main outcome and is not clearly represented in Table 3
- Change scores from baseline were compared between groups; analysis of covariance of final outcome scores, with baseline score and group assignment as covariates, is generally to be preferred for longitudinal data
- Randomization, follow-up, and descriptions of treatments are adequate
- Blinding of assessors of outcome was said to be difficult to implement and was not done; the reason for this is not clear, since grip strength could be done without awareness of treatment group
- Sample size calculation was done to detect a 25% difference in success rate between groups when the least successful group had a 40% success rate at 6 weeks; it is not clear whether this is powered to test a global null hypothesis (all three groups have the same success rate) or whether it is powered to allow comparisons of two specific groups such as PT and wait-and-see

Assessment: Adequate; could support an evidence statement that corticosteroid injection is beneficial in short term, but physical therapy which includes a supervised exercise program is more successful in the long term than steroid injection

Comparison of wait-and-see approach is not clearly enough separated from injection or PT to support an evidence statement, but a large advantage of PT over wait-and-see is unlikely