Evidence-Based Treatment of Tennis Elbow

Smidt N, van der Windt DA, Assendelft WJ, et al. Corticosteroid injections, physiotherapy, or a wait-and-see policy for lateral epicondylitis: a randomised controlled trial. Lancet 2002;359:657–62.

Study Overview

Objectives. To compare 3 common treatments for lateral epicondylitis and determine which is the most effective.

Design. Randomized controlled trial with an intention-to-treat analysis.

Setting and participants. Consecutive participants were recruited by 85 family doctors and referred to 1 of 5 research centers in the Netherlands. Inclusion criteria included pain at the lateral side of the elbow; increasing pain with pressure on the lateral epicondyle and resisted dorsiflexion of the wrist; age 18 to 70 years; ability to complete the questionnaires; and willingness to participate. Exclusion criteria included treatment of elbow complaints with corticosteroid injections or physiotherapy within the preceding 6 months; bilateral elbow symptoms, duration of pain less than 6 weeks, signs and symptoms to suggest another cause of elbow pain, prior surgery of the elbow, dislocation, tendon ruptures, or fractures in the area over the prior year; systemic musculoskeletal or neurological disorders; and contraindications to corticosteroids.

Intervention. The intervention occurred over a 6-week period and compared corticosteroid injections and physiotherapy to a control treatment of wait-and-see. Patients assigned to injections received 1 mL (10 mg/mL) of triamcinolone acetonide and 1 mL lidocaine 2%. Patients were injected at every tender spot within the elbow until the patient was free of pain during resisted dorsiflexion. During the 6-week intervention period, a maximum of 3 injections was recommended. All providers received training in injection technique prior to the trial. Patients assigned to physiotherapy underwent 9 treatments of pulsed ultrasound, deep friction massage, and an exercise program over the 6-week intervention period. All physiotherapists received special training in the intervention techniques. Wait-and-see patients were treated with analgesic medications and encouragement.

Main outcome measures. Outcomes were assessed before randomization and at 3, 6, 12, 26, and 52 weeks after randomization. Most primary outcomes were self-reported by the patient and assessed through questionnaires. These outcomes included pain during the day, severity of the main complaint, inconvenience, elbow disability, and patient satisfaction. The primary outcome of overall severity of elbow complaints was scored by a blinded research physiotherapist after taking a standardized history and physical examination. Secondary outcomes included pain-free grip strength, maximal grip strength, and pressure pain threshold, and they were measured by a research physiotherapist using standardized equipment.

Main results. 185/259 patients referred to the research center were randomized. The dropout rate after randomization was less than 2%. The groups were similar, except that participants randomized to steroid injections had more previous episodes of lateral elbow pain and more concomitant neck disorders. At 6 weeks, 57 patients (92%) in the injection group, 30 (47%) in the physiotherapy group, and 19 (32%) in the wait-and-see group noted significant improvement in their symptoms. Additionally, the corticosteroid injection group scored significantly better in all primary and secondary outcomes compared with physiotherapy and wait-and-see. However, by 26 and 52 weeks, the physiotherapy group scored significantly better than the injection therapy group in all outcomes. Physiotherapy was slightly superior to wait-and-see, but the difference was nonsignificant.

Conclusion. For lateral epicondylitis, corticosteroid injections seem to offer immediate and short-term improvement, but more sustained improvement results from physiotherapy.

Commentary

Lateral epicondylitis is a common complaint affecting between 1% and 2% of the general population [1]. Despite this frequency, very little evidence exists to guide clinicians. A meta-analysis on treatment for lateral epicondylitis concluded

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