**Arik H, Kose O, et al. Injection of autologous blood versus corticosteroid for lateral epicondylitis: a randomised controlled study. J Orthop Surg (Hong Kong). 2014;22(3);333-7.**

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Design: Randomized clinical trial

Purpose of study: to compare the effectiveness of autologous whole blood versus steroid injection for lateral epicondylitis

Population/sample size/setting:

* 80 patients (21 men, 59 women, mean age 45) treated for lateral epicondylitis at a university orthopedics and rehabilitation hospital in Turkey
* Eligibility required pain in the lateral epicondyle exacerbated by activities, tenderness over the tendon of the extensor carpi radialis brevis 5 to 10 mm distal to the epicondyle, and pain around the extensor origin with forced dorsiflexion of the wrist and middle finger
* Exclusion criteria were recent trauma, congenital or neuromuscular disease, upper limb surgery, rheumatic disease, cervical disc pathology, carpal tunnel syndrome, abnormality of the upper limb, systemic corticosteroid treatment, local injection treatment, or an allergic reaction to local anaesthetics or corticosteroids

Interventions:

* Randomization was to one of two injections: autologous whole blood (n=40) or steroid (n=40)
  + The whole blood group had 2 ml of venous blood collected from the antecubital fossa of the ipsilateral side plus 1 ml of 2% prilocaine HCl
  + Steroid group had 1 ml of 40 mg methylprednisolone acetate plus I ml of 2% prilocaine HCl
* Patients were instructed to avoid heavy work, but NSAIDS and physical therapy were not prescribed

Outcomes:

* Followup was done on days 15, 30, and 90 using a pain VAS and the Turkish version of the patient-related tennis elbow evaluation (PRTEE); grip strength was measured with a hydraulic dynamometer using the American Society of Hand Therapists guidelines
* At 6 months, patients were contacted by telephone for an interview to assess elbow pain on the VAS, and all patients completed the 6 month followup
* At day 15, the steroid group fared better than the whole blood group for all measures:
  + Steroid average VAS was 1.7 and whole blood was 5.3
  + Steroid average PRTEE was 19.5 and whole blood was 51.2
  + Steroid average grip strength was 24.3 and whole blood was 8.3
* Also at day 30, the steroid group fared better than the whole blood group for VAS and PRTEE :
  + Steroid average VAS was 2.5 and whole blood was 3.6
  + Steroid average PRTEE was 25.0 and whole blood was 34.3
  + Steroid average grip strength was 20.3 and whole blood was 21.8
* However, at day 90, the whole blood group fared better than the steroid group on all measures:
  + Steroid average VAS was 3.7 and whole blood was 2.1
  + Steroid average PRTEE was 34.5 and whole blood was 19.4
  + Steroid average grip strength was 20.0 and whole blood was 34.9
* At day 180, the telephone interviews reported average VAS for the whole blood group as 0.6 and for the steroid group the score was 2.7
* If a 37% decrease in PRTEE is defined as a successful outcome of treatment, this criterion was met in 95% of the whole blood group and in 62.5% of the steroid group

Authors’ conclusions:

* Autologous whole blood was more effective than steroid injection over the followup period, which was relatively short
* There may have been some biases arising from a lack of blinding of patients and physicians
* Autologous whole blood is recommended as a first-line injection because it is simple, cheap, and effective

Comments:

* A lack of blinding of outcome assessment is a theoretical limitation to the study, but would have to take the form of a bias in favor of steroids in the first 30 days and a bias against them in the 90 day and 180 day followups
* Such a pattern of bias could occur if the authors expected to see steroid better than whole blood in the very short term and whole blood better than steroid in the intermediate term
* The course of steroid effectiveness, with an initial response followed by significant attenuation of response, is, however, likely to be valid

Assessment: For the effectiveness of autologous whole blood in lateral epicondylitis: inadequate

For steroid injection having an initial benefit followed by decline of effect: adequate