

Nirschl RP, Rodin DM, et al. Iontophoretic Administration of Dexamethasone Sodium Phosphate for Acute Epicondylitis. Am J Sports Med 2003;31(2):189-195.

Design: Randomized clinical trial

Population/sample size/setting:

- 199 patients (109 women, 90 men, mean age 50) treated for epicondylitis in a sports medicine facility in Virginia
- Inclusion criteria were clinical signs of medial or lateral epicondylitis, with a duration of symptoms of 3 months or less during most recent episode, with investigator assessment of epicondylitis of moderate or greater severity
- Exclusion criteria were recurrent injury to the subject area, bilateral involvement, steroid injection to the area in past 12 months, or prior surgery to the area; other exclusion grounds were NSAID use, steroid use, or other analgesics in past 3 days, workers' compensation claim or any litigation for any medical condition, and several other upper extremity conditions

Main outcome measures:

- All patients had 6 sessions of iontophoresis spaced 1 to 3 days apart, completing the treatment course within 15 days
- Randomization was to either dexamethasone 0.4% (n=99) or to normal saline solution (n=100); all treatments were 40 milliamp-minutes of either solution
- First set of outcomes was measured at a clinic visit 2 days after the completion of treatment
- The 2-day follow-up compared several primary outcomes: investigator's global evaluation of improvement on a 6 point scale, patient's global evaluation on the same 6 point scale, and patient's pain evaluation on a 100 mm VAS
- Half of patients in both groups reported leisure activity as the cause of their condition, and one fourth reported work activities as the cause
- At the 2-day follow-up, investigators global assessment of condition as improved was recorded in 52% of dexamethasone and 33% of saline patients (p=.013), but the patient global assessment as improved was recorded in 48% of dexamethasone and in 41% of saline patients—a non-significant difference
- Pain VAS on the 2-day follow-up was reduced by 23 mm from baseline in the dexamethasone patients and by 14 mm in the saline patients (p=.012)
- The 30 day follow-up was done by telephone; at that time, the global assessment was improved in 54% of dexamethasone and in 49% of saline patients; the pain reduction from baseline was 24.5 mm in dexamethasone and 19.5 mm in saline patients; neither comparison was significant
- Adverse effects caused 1 dexamethasone and 3 saline patients to withdraw from the study; several other patients in both groups had skin irritation not sufficient to cause withdrawal from the study

Authors' conclusions:

- Six sessions of iontophoresis effectively reduce symptoms of medial and lateral epicondylitis
- The fact that the treatment groups did not differ at 1 month may be due to the use of additional modalities between 2 day and 1 months assessments of progress
- Iontophoresis may enable patients to tolerate exercise and thereby accelerate the recovery process

Comments:

- An additional post hoc analysis, showing that patients who completed their 6 treatments in 10 days or less did better than patients who completed treatment in more than 10 days, is interesting, but may be due to greater participation of patients who were perceiving early benefits, and does not mean that more rapid completion of treatment should be required of patients
- While the investigators' global evaluation of improvement at 2 days showed an advantage of dexamethasone, the patients' global evaluation was equal
- Similarly, for the secondary outcome measures, the differences reported by investigators (% of patients with improvement in tenderness scores) were greater than the differences reported by the patients (% reporting symptom improvement)
- Therefore, the treatment advantage of dexamethasone is very modest, even in the immediate follow-up
- In patients who are symptomatic for more than 3 months, the benefits of iontophoresis remain undefined; because workers' compensation claimants were excluded, the benefits in this population are also not clear

Assessment: Inadequate for a guideline evidence statement supporting or not supporting iontophoresis (benefit is small and attested only by the investigators' assessment, workers' comp excluded from study, benefits beyond 2 days not clear)