Phonophoresis of dexamethasone sodium phosphate may manage pain and symptoms of patients with carpal tunnel syndrome.

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Abstract

OBJECTIVES:

This study was designed to compare the efficacy of iontophoresis and phonophoresis of dexamethasone sodium phosphate (Dex-P) treatment for mild to moderate carpal tunnel syndrome (CTS).

METHODS:

Fifty-two hands in 34 consecutive patients with mild to moderate CTS confirmed by electromyography were allocated randomly into 2 groups. One group received iontophoresis of 0.4% Dex-P and the other group received phonophoresis of 0.4% Dex-P. Phonophoresis (using ultrasound 1 MHz, 5-cm probe, 1.0 W/cm, pulse 1:4, 5 min/session) and iontophoresis (using galvanic current, negative electrode, 2 mA/min, total dose 40 mA for 20 min) was applied over the wrist chin for 10 daily treatment sessions (5 sessions/wk). Measurements were performed before and after treatment and at follow-up 4 weeks later, and included pain assessment by visual analogue scale, electroneurographic measurement (motor and sensory latency, motor and sensory action potential amplitude), and pinch and grip strength.

RESULTS:

Improvement was significantly more pronounced in the phonophoresis group than in the iontophoresis group for motor latency [mean difference 0.8 m/s; 95% confidence interval (CI), 0.5-1.1], motor action potential amplitude (4.1 mV; 95% CI, 3.0-5.2), finger pinch strength (31.6 N; 95% CI, 15.9-47.3), hand grip strength (27.1 N; 95% CI, 13.5-40.5), and pain relief (2.1 points on a 10-point scale; 95% CI, 1.3-2.9). Effects were sustained in the follow-up period.

DISCUSSION:

Phonophoresis of Dex-P treatment was more effective than iontophoresis of Dex-P for treatment of CTS. Further study is needed to investigate the combination therapy effects of these treatments with other conservative treatments in CTS patients.
Comment in

- Phonophoresis versus placebo for carpal tunnel syndrome. [Clin J Pain. 2013]

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