

Extracorporeal Shock Wave Therapy without Local Anesthesia for Chronic Lateral Epicondylitis

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Background: The use of extracorporeal shock wave therapy for the treatment of lateral epicondylitis is controversial. The purpose of this study was to evaluate the use of extracorporeal shock wave therapy without local anesthesia to treat chronic lateral epicondylitis.

Methods: One hundred and fourteen patients with a minimum six-month history of lateral epicondylitis that was unresponsive to conventional therapy were randomized into double-blind active treatment and placebo groups. The protocol consisted of three weekly treatments of either low-dose shock wave therapy without anesthetic or a sham treatment. Patients had a physical examination, including provocation testing and dynamometry, at one, four, eight, and twelve weeks and at six and twelve months after treatment. Radiographs, laboratory studies, and electrocardiograms were also evaluated prior to participation and at twelve weeks. A visual analog scale was used to evaluate pain, and an upper extremity functional scale was used to assess function. Crossover to active treatment was initiated for nonresponsive patients who had received the placebo and met the inclusion criteria after twelve weeks.

Results: A total of 108 of the 114 randomized patients completed all treatments and the twelve weeks of follow-up required by the protocol. Sixty-one patients completed one year of follow-up, whereas thirty-four patients crossed over to receive active treatment. A significant difference ($p = 0.001$) in pain reduction was observed at twelve weeks in the intent-to-treat cohort, with an improvement in the pain score of at least 50% seen in 61% (thirty-four) of the fifty-six patients in the active treatment group who were treated according to protocol compared with 29% (seventeen) of the fifty-eight subjects in the placebo group. This improvement persisted in those followed to one year. Functional activity scores, activity-specific evaluation, and the overall impression of the disease state all showed significant improvement as well ($p < 0.05$). Crossover patients also showed significant improvement after twelve weeks of active treatment, with 56% (nineteen of thirty-four) achieving an improvement in the pain score of at least 50% ($p < 0.0001$).

Conclusions: These results demonstrate that low-dose shock wave therapy without anesthetic is a safe and effective treatment for chronic lateral epicondylitis.

Level of Evidence: Therapeutic Level I. See Instructions to Authors for a complete description of levels of evidence.