Treatment of Lateral Epicondylitis With Platelet-Rich Plasma, Glucocorticoid, or Saline
A Randomized, Double-Blind, Placebo-Controlled Trial

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Abstract

Background: Lateral epicondylitis (LE) is a common musculoskeletal disorder for which an effective treatment strategy remains unknown.

Purpose: To examine whether a single injection of platelet-rich plasma (PRP) is more effective than placebo (saline) or glucocorticoid in reducing pain in adults with LE after 3 months.

Study Design: Randomized controlled trial; Level of evidence, 1.

Methods: A total of 60 patients with chronic LE were randomized (1:1:1) to receive either a blinded injection of PRP, saline, or glucocorticoid. The primary end point was a change in pain using the Patient-Rated Tennis Elbow Evaluation (PRTEE) questionnaire at 3 months. Secondary outcomes were ultrasonographic changes in tendon thickness and color Doppler activity.

Results: Pain reduction at 3 months (primary end point) was observed in all 3 groups, with no statistically significant difference between the groups; mean differences were the following: glucocorticoid versus saline: −3.8 (95% CI, −9.9 to 2.4); PRP versus saline: −2.7 (95% CI, −8.8 to 3.5); and glucocorticoid versus PRP: −1.1 (95% CI, −7.2 to 5.0). At 1 month, however, glucocorticoid...
reduced pain more effectively than did both saline and PRP; mean differences were the following: glucocorticoid versus saline: $-8.1$ (95% CI, $-14.3$ to $-1.9$); and glucocorticoid versus PRP: $-9.3$ (95% CI, $-15.4$ to $-3.2$). Among the secondary outcomes, at 3 months, glucocorticoid was more effective than PRP and saline in reducing color Doppler activity and tendon thickness. For color Doppler activity, mean differences were the following: glucocorticoid versus PRP: $-2.6$ (95% CI, $-3.1$ to $-2.2$); and glucocorticoid versus saline: $-2.0$ (95% CI, $-2.5$ to $-1.6$). For tendon thickness, mean differences were the following: glucocorticoid versus PRP: $-0.5$ (95% CI, $-0.8$ to $-0.2$); and glucocorticoid versus saline: $-0.8$ (95% CI, $-1.2$ to $-0.5$).

**Conclusion:** Neither injection of PRP nor glucocorticoid was superior to saline with regard to pain reduction in LE at the primary end point at 3 months. However, injection of glucocorticoid had a short-term pain-reducing effect at 1 month in contrast to the other therapies. Injection of glucocorticoid in LE reduces both color Doppler activity and tendon thickness compared with PRP and saline.

**Footnotes**

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