



## Q/ Do autologous blood and PRP injections effectively treat tennis elbow?

### EVIDENCE-BASED ANSWER

**A** | YES, both approaches reduce pain, but the improvement with platelet-rich plasma (PRP) is not clinically meaningful. Autologous blood injections (ABIs) are more effective than corticosteroid injections for reducing pain and disability in patients with tennis elbow in both the short and long term (strength of recommendation [SOR]: **B**, consistent findings in 2 randomized controlled trials [RCTs]).

PRP injections reduce pain more than sham injections for chronic tennis elbow (SOR: **B**, high-quality RCT). However, the magnitude of the difference is small.

#### Autologous blood injections reduce pain

A 2013 RCT assessed the effectiveness of ABI (2 mL venous blood and 1 mL 2% lidocaine) compared with injection of 40 mg methylprednisolone and 1 mL 2% lidocaine in 50 patients with tennis elbow (mean age 38.2 years, mean duration of symptoms 4.5 weeks).<sup>1</sup> The degree of pain and disability were evaluated at baseline, 2 weeks, and 6 weeks using a visual analog pain scale (VAS) and Nirschl functional staging, respectively, both measured on 10-point scales. Researchers found no statistical difference between the groups at baseline or 2 weeks. At 6 weeks, however, the ABI group showed significant improvements over the steroid group in pain (mean VAS=1.52 vs 2.28;  $P=.0396$ ) and disability (mean Nirschl stage=1.40 vs 2.40;  $P=.0045$ ).

A previous RCT, in 2012, compared ABI (2 mL of venous blood and 1 mL of 0.5% bupivacaine) in 30 patients (mean age 42.9 years, mean duration of symptoms 9.5 weeks) with a corticosteroid injection (80 mg of methylprednisolone and 1 mL of 0.5% bupivacaine) in another

30 patients (mean age 42.2 years, mean duration of symptoms 7.7 weeks). Outcomes were assessed at 12 weeks and 6 months on a 10-point VAS and 7-point Nirschl stage.<sup>2</sup>

The ABI group showed a significant decrease in pain and disability compared with the steroid group (mean VAS at 12 weeks=0.6 vs 1.5,  $P=.0127$ ; mean VAS at 6 months=0.5 vs 1.8;  $P=.0058$ ; mean Nirschl stage at 12 weeks=0.43 vs 1.0;  $P=.0184$ ; mean Nirschl stage at 6 months=0.36 vs 1.2;  $P=.0064$ ).

#### PRP: Some efficacy, little significance

A 2014 double-blinded RCT analyzed the efficacy of PRP injection vs control injection for treating tennis elbow of at least 3 months' duration.<sup>3</sup> A total of 112 patients (mean age 48.4 years) received a 2- to 3-mL injection of PRP at a site blocked with bupivacaine; 113 patients (mean age 47.4 years) received an injection of 2 to 3 mL 0.5% bupivacaine only. Success was defined as a  $\geq 25\%$  improvement in pain score on a 100-point VAS.

At 24 weeks, the PRP group demonstrated a success rate of 83.9% compared with 68.3% in the control group (number needed to treat=6;  $P=.037$ ). However, the difference between the mean VAS improvement of 38 points in the PRP group and the mean decrease of 36 points in the control group carries little clinical significance. **JFP**

#### References

1. Jindal N, Gaury Y, Banshiwal RC, et al. Comparison of short term results of single injection of autologous blood and steroid injection in tennis elbow: a prospective study. *J Orthop Surg Res*. 2013;8:10.
2. Dojode C. A randomised control trial to evaluate the efficacy of autologous blood injection versus local corticosteroid injection for treatment of lateral epicondylitis. *Bone Joint Res*. 2012;1:192-197.
3. Mishra A, Skrepnik NV, Edwards SG, et al. Efficacy of platelet-rich plasma for chronic tennis elbow: a double-blind, prospective, multicenter, randomized controlled trial of 230 patients. *Am J Sports Med*. 2014;42:463-471.

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