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Q/ Does platelet-rich plasma improve patellar tendinopathy symptoms?

EVIDENCE-BASED ANSWER

A/ IT'S UNCLEAR. High-quality data have not consistently established the effectiveness of platelet-rich plasma (PRP) injections to improve symptomatic recovery in patellar tendinopathy, compared to placebo (strength of recommendation [SOR]: A, based on 3 small randomized controlled trials [RCTs]). The

3 small RCTs included only 111 patients, total. One found no evidence of significant improvement with PRP compared to controls. The other 2 studies showed mixed results, with different outcome measures favoring different treatment groups and heterogeneous results depending on follow-up duration.

Evidence summary

Symptoms improve with PRP— but not significantly

A 2014 double-blind RCT ($n = 23$) explored recovery outcomes in patients with patellar tendinopathy who received either 1 injection of leukocyte-rich PRP or ultrasound-guided dry needling.¹ Both groups also completed standardized eccentric exercises. Participants were predominantly men, ages ≥ 18 years. Symptomatic improvement was assessed using the Victorian Institute of Sport Assessment-Patella (VISA-P), an 8-item subjective questionnaire of functionality with a range of 0 to 100, with 100 as the maximum score for an asymptomatic individual.

At 12 weeks posttreatment, VISA-P scores improved in both groups. However, the improvement in the dry needling group was not statistically significant (5.2 points; 95% CI, -2.2 to 12.6; $P = .20$), while in the PRP group it was statistically significant (25.4 points; 95% CI, 10.3 to 40.6; $P = .01$). At ≥ 26 weeks, statistically significant improvement was observed in both treatment groups: scores improved by 33.2 points (95% CI, 24.1 to 42.4; $P = .001$) in the dry needling group and by 28.9 points (95% CI, 11.4 to 46.3; $P = .01$) in

the PRP group. However, the difference between the groups' VISA-P scores at ≥ 26 weeks was not significant ($P = .66$).¹

No significant differences observed for PRP vs placebo or physical therapy

A 2019 single-blind RCT ($n = 57$) involved patients who were treated with 1 injection of either leukocyte-rich PRP, leukocyte-poor PRP, or saline, all in combination with 6 weeks of physical therapy.² Participants were predominantly men, ages 18 to 50 years, and engaged in recreational sporting activities. There was no statistically significant difference in mean change in VISA-P score at any timepoint of the 2-year study period. P values were not reported.²

A 2010 RCT ($n = 31$) compared PRP (unspecified whether leukocyte-rich or -poor) in combination with physical therapy to physical therapy alone.³ Groups were matched for sex, age, and sports activity level; patients in the PRP group were required to have failed previous treatment, while control subjects must not have received any treatment for at least 2 months. Subjects were evaluated pre-treatment, immediately posttreatment, and 6 months posttreatment. Clinical evaluation

was aided by use of the Tegner activity score, a 1-item score that grades activity level on a scale of 0 to 10; the EuroQol-visual analog scale (EQ-VAS), which evaluates subjective rating of overall health; and pain level scores.

At 6 months posttreatment, no statistically significant differences were observed between groups in EQ-VAS and pain level scores. However, Tegner activity scores among PRP recipients showed significant percent improvement over controls at 6 months posttreatment (39% vs 20%; $P = .048$).³

Recommendations from others

Currently, national orthopedic and professional athletic medical associations have recommended that further research be conducted in order to make a strong statement in favor of or against PRP.^{4,5}

Editor's takeaway

Existing data regarding PRP fails, again, to show consistent benefits. These small sample sizes, inconsistent comparators, and heterogeneous results limit our certainty. This lack of quality evidence does not prove a lack of effect, but it raises serious doubts. **JFP**

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