

# Editorial Commentary: Elbow Lateral Epicondylitis Treatment Using Platelet-Rich Plasma



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**Abstract:** The best treatment for elbow lateral epicondylitis is controversial. Multiple treatment interventions are used commonly, including physical therapy, corticosteroid injections, nonsteroidal anti-inflammatory drugs, bracing, acupuncture, ultrasound-guided percutaneous tenotomy, open or arthroscopic surgical debridement, and recently, platelet-rich plasma (PRP) or autologous blood injections. Patients in whom more traditional conservative measures have failed may benefit from PRP injections, although long-term outcomes after such injections are unclear. The complication rates of PRP injections are low. One PRP injection, if successful, could be a cost-effective alternative to surgery, but multiple injections are often recommended and third-party payers have historically rarely paid those medical claims, thus placing an increased financial burden on the patient.

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Lateral epicondylitis is a commonly occurring, painful condition characterized by activity-related pain and tenderness at the origin of the extensor carpi radialis brevis muscle. Despite its prevalence, however, the best treatment for such patients remains controversial. Multiple treatment interventions are commonly used, including physical therapy, corticosteroid injections, nonsteroidal anti-inflammatory drugs, bracing, acupuncture, and ultrasound-guided percutaneous tenotomy,<sup>1,2</sup> as well as both open and arthroscopic surgical debridement.<sup>3-5</sup> More recently, the role of platelet-rich plasma (PRP) injections in the management of lateral epicondylitis has been examined. Both PRP<sup>3,6,7</sup> and autologous blood<sup>8</sup> injections have been introduced and recommended by some investigators as effective alternative treatments. PRP is known to improve osteochondral healing both macroscopically and microscopically in animal models.<sup>9,10</sup> Some clinical research has, in fact, shown that PRP injections may play an effective role in the treatment of this condition and have a very low

complication rate.<sup>11-14</sup> Other studies, however, dispute the efficacy of PRP injections for the treatment of chronic lateral epicondylitis.<sup>11,15,16</sup>

In their systematic review entitled "To Improve Pain and Function, Platelet-Rich Plasma Injections May Be an Alternative to Surgery for Treating Lateral Epicondylitis: A Systematic Review," Hardy, Tori, Fuchs, Larson, Brand, and Monroe<sup>17</sup> seek to determine whether PRP injections offer patients comparable outcomes versus surgical intervention for lateral epicondylitis. After a search of various databases, more than 7,000 articles were identified, but only 3 articles met the authors' inclusion criteria (1 Level II and 2 Level III studies). Regrettably, varying PRP volumes, formulations, buffering agents, and manufacturers' devices were used to produce the PRP in these respective studies. In addition, unfortunately, the surgical techniques used to accomplish lateral epicondylitis debridement in these 3 studies varied significantly and included both open and arthroscopic techniques.

The patient outcomes reported for these 3 studies varied substantially as well. One of the studies noted that, at each of the follow-up periods, the group that received PRP injections reported significantly more pain relief compared with the surgical group.<sup>18</sup> Conversely, another of the studies found that, although patients consistently showed a reduction in pain complaints and showed improved elbow function after PRP injections at shorter follow-up intervals, long-term clinical benefits were much more likely to occur among the surgically managed patients.<sup>19</sup> Specifically, in the PRP group in this study,

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progressively worsening pain during activity developed at 1 and 2 years of follow-up in contradistinction to the surgically managed patients. In fact, Merolla et al.<sup>19</sup> stated, pertaining to the PRP group, that “the poor clinical outcomes found at 2 years in our study are consistent with other research findings showing that PRP is not effective in long term pain reduction.”

In this systematic review, Hardy et al.<sup>17</sup> conclude from their investigation that PRP injections are an appropriate alternative for the treatment of lateral epicondylitis. Indeed, PRP injections have shown efficacy in some previous studies,<sup>3,6,7</sup> but not all studies have made similar determinations.<sup>14-16,20</sup> Likewise, previously published systematic reviews and meta-analyses comparing PRP use with other interventions for the treatment of lateral epicondylitis have reached variable conclusions.<sup>20-25</sup> Hardy et al. also commented on the low complication rate after PRP injections. In fact, no patient in any of the 3 included studies sustained a complication after either receiving a PRP injection or undergoing surgical intervention. The authors also remark on the potential cost savings related to PRP injections when compared with surgical intervention and state that “a single injection of PRP costs \$1,000 or more for each injection while surgery costs \$4,000 or greater.” Certainly, 1 PRP injection, if successful in adequately alleviating a patient’s symptoms long term, would potentially be a cost-effective alternative to surgical intervention. However, multiple injections are often recommended for and performed in an individual with lateral epicondylitis, and third-party payers have historically rarely paid the medical claims for such treatment, thus placing an increased financial burden on the patient.

PRP injections may ultimately be found to be an equivalent treatment alternative for lateral epicondylitis. Patients in whom more traditional conservative measures have failed, including activity modification, nonsteroidal anti-inflammatory drugs, bracing, and physical therapy, may benefit from PRP injections, although long-term outcomes after such injections are unclear. The systematic review appraised here does contribute valuable, additional information for surgeons and other stakeholders to consider when making treatment decisions on behalf of their patients with lateral epicondylitis, but this research alone will not strongly influence our current decision-making algorithm of care for lateral epicondylitis patients. Certainly, as additional research is completed and published, the most appropriate role, if any, and best formulation (including the timing and volume of PRP injections) in the management of chronic lateral epicondylitis will be better defined.

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