Platelet-rich plasma injections

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Clinical question

How effective is platelet-rich plasma (PRP) for treating Achilles tendinopathy, lateral epicondylitis, and rotator cuff tendinopathy?

Bottom line

The best-quality evidence shows no difference in pain, function, or return to sport between PRP, dry needling, and saline for patients with Achilles tendinopathy, lateral epicondylitis, or rotator cuff tendinopathy.

Evidence

The following are patient-important outcomes from placebo-controlled RCTs.

- For chronic Achilles tendinopathy, 3 RCTs compared PRP injections with saline.[1-3]
  - -In the highest-quality double-blind RCT, 54 patients were randomized to 1 injection of PRP or saline.[1] There were no significant differences in pain, function, return to sport, or patient satisfaction at 6, 12, and 24 weeks.
  - -In 2 smaller, unblinded RCTs (24 to 38 patients), there were inconsistent results. One compared a single injection of PRP with saline (24 patients)[2] and found no difference in pain at 12 weeks. Another compared 4 injections (1 every 2 weeks) of PRP or saline (38 patients)[3] and found PRP statistically significantly improved pain on a 100-point scale at 6 weeks (PRP 37 points, saline 23 points), 12 weeks (PRP 41 points, saline 30 points), and 24 weeks (PRP 37 points, saline 18 points).
  - -A systematic review found similar results to the above.[4]
- For chronic lateral epicondylitis, there were 2 RCTs.[5,6]
  - -In a study comparing PRP with saline (60 patients, 1 injection),[5] there was no difference in pain or function at 12 weeks.
  - -In a study comparing PRP plus dry needle insertion with dry needle alone (28 patients, 2 injections 1 month apart),[6] there was no difference in pain at 24 weeks.
  - -Limitations: The treating physician was not blinded,[5] there was a high dropout rate,[5] and studies had small numbers of participants.[6]
- For rotator cuff tendinopathy (at least 3 months of symptoms), 2 RCTs[7,8] compared PRP with saline (40 patients) or dry needling (39 patients) and found no difference in pain or disability scores.
- No adverse events (including tendon rupture) were reported.

Context

- Platelet-rich plasma injections require specialized equipment and training.[9]
- Each injection costs about $500 and is not normally covered by insurance (telephone communication with administrative staff, Glen Sather Sports Medicine Clinic, Edmonton, Alta, May 2019).

Implementation

Up to 90% of those with lateral epicondylitis heal within a year without any intervention.[10] Corticosteroid injections might be effective in the short term; however, they could result in worse outcomes than no treatment at 1 year.[10] Physiotherapy-led exercises have been found to improve pain in 39% to 100% of patients.[10] Topical nitrates have shown inconsistent benefit for tendinopathies. For example, in lateral epicondylitis, topical nitrates showed a pain reduction of 4 points (out of 10) over placebo at 6 months in one trial but did not show benefit over placebo at 8 weeks in another trial.[11] Patient handouts might be helpful in explaining treatment options and exercises.[12,13]

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Competing interests

None declared

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