

Efficacy of Platelet-Rich Plasma in the Treatment of Knee Osteoarthritis: A Meta-analysis of Randomized Controlled Trials

An up-to-date, excellent Level I (the best) literature review of PRP vs. viscosupplementation (HA) injections for knee arthritis. Pain relief & improved functional results with PRP are as good as HA at 6 months; better at one year. "More for your money!" As stated best by the orthopedic peer-reviewed Arthroscopy journal in which this article appears, "The time has come for those of us who have not yet tried platelet-rich plasma injections in our patients with symptomatic knee arthritis to do so." -Kelly Cunningham MD Abstract PURPOSE:

To use meta-analysis techniques to evaluate the efficacy and safety of platelet-rich plasma (PRP) injections for the treatment knee of osteoarthritis (OA). METHODS:

We performed a systematic literature search in PubMed, Embase, Scopus, and the Cochrane database through April 2016 to identify Level I randomized controlled trials that evaluated the clinical efficacy of PRP versus control treatments for knee OA. The primary outcomes were Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) pain and function scores. The primary outcomes were compared with their minimum clinically important differences (MCID)-defined as the smallest difference perceived as important by the average patient. RESULTS:

We included 10 randomized controlled trials with a total of 1069 patients. Our analysis showed that at 6 months postinjection, PRP and hyaluronic acid (HA) had similar effects with respect to pain relief (WOMAC pain score) and functional improvement (WOMAC function score, WOMAC total score, International Knee Documentation Committee score, Lequesne score). At 12 months postinjection, however, PRP was associated with significantly better pain relief (WOMAC pain score, mean difference -2.83, 95% confidence interval [CI] -4.26 to -1.39, $P = .0001$) and functional improvement (WOMAC function score, mean difference -12.53, 95% CI -14.58 to -10.47, $P < .00001$; WOMAC total score, International Knee Documentation Committee score, Lequesne score, standardized mean difference 1.05, 95% CI 0.21-1.89, $P = .01$) than HA, and the effect sizes of WOMAC pain and function scores at 12 months exceeded the MCID (-0.79 for WOMAC pain and -2.85 for WOMAC function score). Compared with saline, PRP was more effective for pain relief (WOMAC pain score) and functional improvement (WOMAC function score) at 6 months and 12 months postinjection, and the effect sizes of WOMAC pain and function scores at 6 months and 12 months exceeded the MCID. We also found that PRP did not increase the risk of adverse events compared with HA and saline. CONCLUSIONS:

Current evidence indicates that, compared with HA and saline, intra-articular PRP injection may have more benefit in pain relief and functional improvement in patients with symptomatic knee OA at 1 year postinjection. LEVEL OF EVIDENCE:

Level I, meta-analysis of Level I studies. Dai WL, et. al.. Department of Orthopaedics, The First Affiliated Hospital of Chongqing Medical University, Chongqing, China

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