

## The temporal effect of platelet-rich plasma on pain and physical function in the treatment of knee osteoarthritis: systematic review and meta-analysis of randomized controlled trials

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### Abstract Results

Fourteen RCTs comprising 1423 participants were included. The control included saline placebo, HA, ozone, and corticosteroids. The follow-up ranged from 12 weeks to 12 months. Risk of bias assessment showed that 4 studies were considered as moderate risk of bias and 10 as high risk of bias. Compared with control, PRP injections significantly reduced WOMAC pain subscores at 3, 6, and 12 months follow-up ( $p=0.02$ ,  $0.004$ ,  $<0.001$ , respectively); PRP significantly improved WOMAC physical function subscores at 3, 6, and 12 months ( $p=0.002$ ,  $0.01$ ,  $<0.001$ , respectively); PRP also significantly improved total WOMAC scores at 3, 6 and 12 months (all  $p<0.001$ ); nonetheless, PRP did not significantly increase the risk of post-injection adverse events (RR, 1.40 [95% CI, 0.80 to 2.45],  $I^2=59\%$ ,  $p=0.24$ ).

### Conclusions

Intra-articular PRP injections probably are more efficacious in the treatment of knee OA in terms of pain relief and self-reported function improvement at 3, 6 and 12 months follow-up, compared with other injections, including saline placebo, HA, ozone, and corticosteroids.

### Study flow diagram

A total of 1423 patients were included for randomization (Table 1). The sample size of PRP group ranged from 12 to 96 patients, whereas that of control groups including HA, placebo, ozone, and corticosteroids, ranged from 11 to 96 participants. WOMAC was the most commonly used efficacy outcome, and 9 studies reported WOMAC (8 studies) [9, 10, 11, 14, 15, 29, 34, 35] or normalized WOMAC (1 study) [13] scores. Follow-up intervals and length were variable among studies. The shortest follow-up was 12 weeks [32] and the longest was 12 months [15, 17, 29, 33, 34]. A summary of PRP intervention effect per study demonstrated comparable efficacy between PRP and HA among 215 patients in 2 studies [17, 32] and superior results in PRP-treated patients compared with control among 1208 patients in the rest 12 studies [9, 10, 11, 13, 14, 15, 29, 30, 31, 33, 34, 35].

Table 1

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