PRP (Platelet Rich Plasma) after ACL Reconstruction

PRP (platelet-rich plasma): This involves giving an injection of a concentration of a patient's own platelets into the knee to promote healing and reduce symptoms of knee osteoarthritis.

Many studies proves that it provides pain relief and functional improvements, often outperforming placebo or hyaluronic acid injections

Systematic Review

Platelet-rich plasma in anterior cruciate ligament reconstruction: An updated systematic review and quantitative meta-analysis of randomized controlled trials

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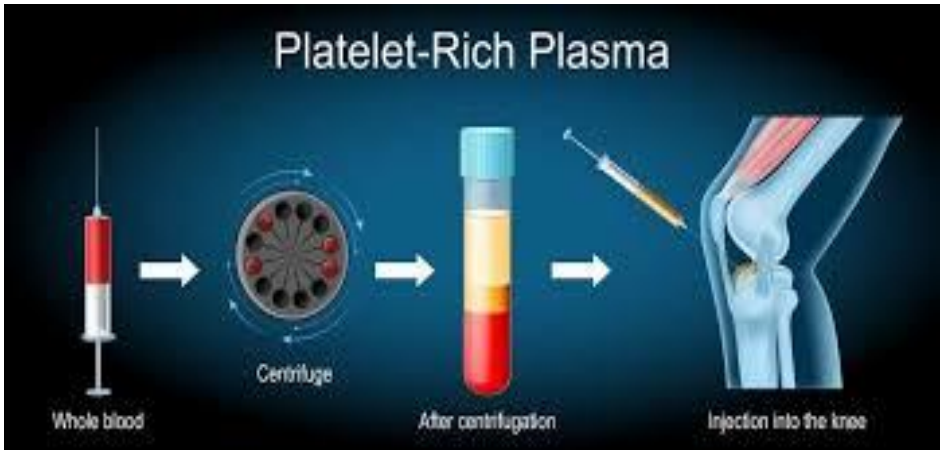
Methods: Following Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines, we conducted a systematic review and meta-analysis of randomized controlled trials comparing PRP with control interventions post-ACL reconstruction. Comprehensive searches were performed across PubMed, Scopus, Web of Science, and Cochrane Library databases up to July 2024. We used "platelet-rich plasma", "controls", and "anterior cruciate ligament reconstruction surgery" as keywords. Statistical analysis was conducted using RevMan 5.3, employing the inverse variance method under a random effects model. We reported outcomes as mean difference (MD) or standardized with confidence intervals (*CI*). A $p < 0.05$ was considered statistically significant.
Results: The analysis incorporated data from 18 studies involving 1082 patients. KT-1000 measurements indicated improved knee stability (MD: -0.57 mm, 95% *CI*: -0.94 to -0.20, $p = 0.002$). However, no significant improvements were observed in the Lysholm score (MD: 0.68, 95% *CI*: −1.24 to 2.26, $p = 0.484$), visual analog scale pain score (MD: -0.34, 95% *CI*: -0.68 to -0.01, $p = 0.057$), International Knee Documentation Committee score (MD: 1.08, 95% *CI*: -1.05 to 3.42, $p = 0.298$), Tegner score (MD: 0.13, 95% *CI*: -0.32 to 0.57, $p = 0.575$), and femoral and tibial tunnel diameters (femoral MD: -0.07 mm, 95% *CI*: -0.46 to 0.32, $p = 0.726$; tibial MD: 0.08 mm, 95% *CI*: -0.60 to 0.75, $p = 0.818$).
Conclusion: Our findings provide moderate evidence that PRP can significantly enhance knee stability post-ACL reconstruction. However, further high-quality randomized controlled trials are needed to

PROCEDURE

Blood is drawn from the arm, spun in a centrifuge to isolate platelet-rich plasma, and injected into the knee joint, often guided by ultrasound. The process takes about 30-60 minutes



Recent literature

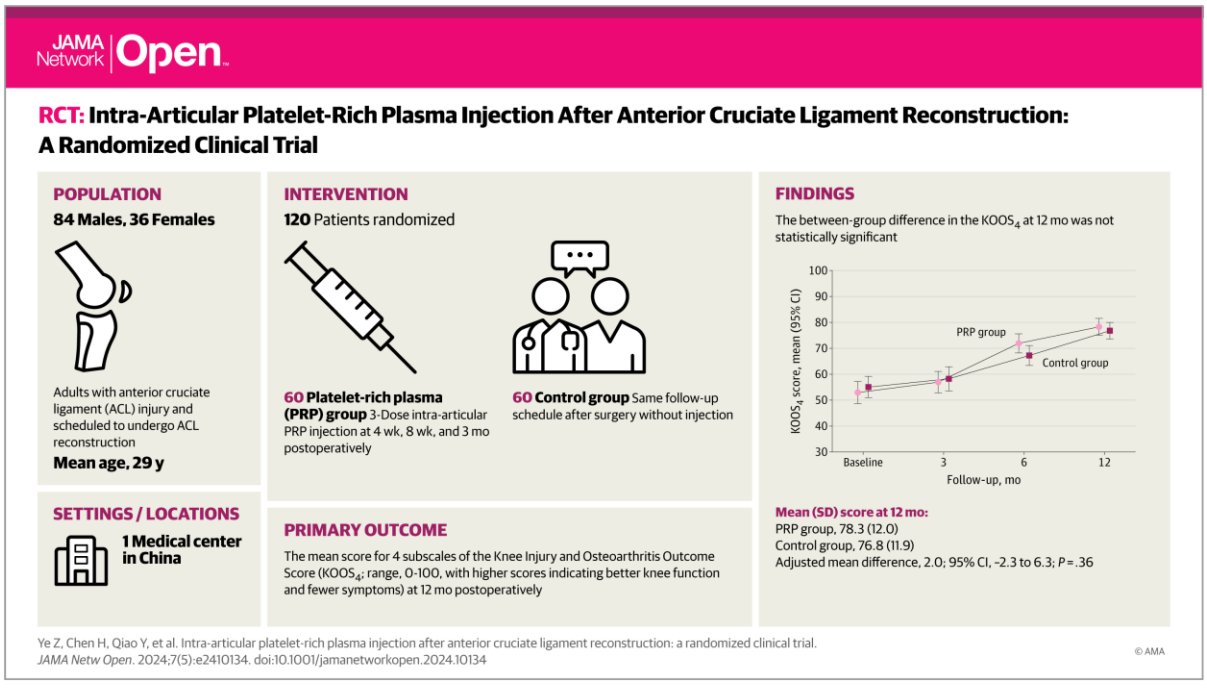
PRP is **safe**

Some studies suggest **enhanced knee stability**

No strong evidence of **improved long-term functional outcomes**

Hetgerogenous Results due to differences in:

- PRP formulation (leukocyte-rich vs poor)
- Application timing (intra-operative vs postoperative)
- Dose and delivery technique
- Outcome measures and follow-up duration



JAMA study