Arthroscopy: The Journal of Arthroscopic & Related Surgery
Volume 31, Issue 5, May 2015, Pages 981–988
doi:10.1016/j.arthro.2014.11.022

Platelet-Rich Plasma Use in Anterior Cruciate Ligament Surgery: Systematic Review of the Literature

David Figueroa., Francisco Figueroa., Rafael Calvo., Alex Vaisman., Ximena Ahumada., Sergio Arellano.

Purpose

To systematically review the current literature for evidence that would substantiate the use of platelet-rich plasma (PRP) in the treatment of anterior cruciate ligament (ACL) ruptures.

Methods

We performed a systematic search in PubMed and Embase of studies written in the English and Spanish languages that compared the use of PRP with a control group in patients with ACL injuries assessing graft-to-bone healing, graft maturation, and/or clinical outcomes and were randomized controlled trials or prospective cohort studies.

Results

Eleven studies fulfilled the inclusion criteria, comprising 516 patients (266 ACL reconstructions using PRP and 250 ACL reconstructions without PRP). Six studies reported a statistically significant difference (4 studies) or tendency toward faster graft maturation in the platelet group (2 studies). One study found no differences. Regarding tunnel healing/widening, 1 study showed faster healing in the PRP group and 5 studies showed no differences between the 2 groups. Considering clinical outcomes, 1 study showed better clinical outcomes with PRP use and 5 studies showed no benefits with the use of PRP.

Conclusions

Concerning ACL graft maturation, there is promising evidence that the addition of PRP could be a synergic factor in acquiring maturity more quickly than grafts with no PRP, with the clinical implication of this remaining unclear. Regarding tunnel healing, it appears that there is not an improvement with the addition of PRP. There is no proof that clinical outcomes of ACL surgery are enhanced by the use of PRP.