FFA Sports Science Education Series

2017 Issue 2

Scope: The aim of the FFA Education Series is to summarise either:
1) a hot topic or 2) a top article from the research literature.

Use of platelet-rich plasma (PRP) injections to treat tendon problems.

What are PRP injections and what do they claim to do?

Platelet-rich plasma injections (PRP) represent a biological regenerative therapy to accelerate the healing processes relating to tendinopathy issues. The use of such therapies in athletes has gained increasing popularity in the sports medicine community as a means to reduce the time to return to training/competition following tendinopathy. The use of PRP injections is proposed to meet the multifaceted demand of the tendinopathic tendon by providing platelet-enriched plasma and thus aiding the healing mechanisms (Andia et al., 2014). Despite the widespread and growing use of PRP injections to accelerate post-injury healing, it remains a controversial therapy given the mixed findings on its effectiveness. Consequently, given the cost and equivocal results, the use of PRP is an issue elite sports practitioners are faced with in clinical practice.

What does the research evidence tell us?

To aid understanding of the collective research literature, systematic reviews (SR) can provide a synthesis of the available studies. Though it should be highlighted that systematic reviews are only as good as the papers they contain and pooling results from papers with a high risk of bias actually compounds the bias (Cochrane Handbook for Systematic Reviews of Interventions).

Table 1 lists the papers included in this Systematic Review alongside a generic statement of the support or lack of for use of PRP. Based on analysis of quality of the systematic reviews and their overall conclusions a recommendation table (Table 2) was created considering:

1) research evidence
2) feasibility in practice
3) recommendation for use.

Grades of recommendation are as follows:

A – High recommendation for use
B – Acceptable
C – Weak
D – Insufficient evidence to recommend / Strong evidence not to recommend

An overall synopsis of the results of PRP studies is presented in Table 2, along with a graded recommendation of the use of PRP based on current available research evidence.

Table 1: Papers included in the systematic review on the efficacy of using PRP in tendon problems.

First author and date	Conclusion regarding use of PRP
Ahmad (2013)	Suggests might be useful but need more research to confirm
Andia (2014)	Suggests might be useful but need more research to confirm
Balasubramaniam (2015)	Inconclusive outcomes
Chou (2016)	Inconclusive outcomes
de Vos (2016)	Refutes the use of PRP
Di Matteo (2015)	Suggests might be useful but need more research to confirm
Fitzpatrick (2016)	Supports the use of PRP
Franceschi (2014)	Suggests might be useful but need more research to confirm
Jeong (2014)	Suggests might be useful but need more research to confirm
Liddle (2015)	Suggests might be useful but need more research to confirm
Moraes (2016)	Inconclusive results
Taylor (2011)	Suggests might be useful but need more research to confirm
Tsikopoulos (2013)	Suggests might be useful but need more research to confirm

Table 2: Grading a recommendation for use in practice: PRP as an example to treat tendon problems.

Source of evidence	Quality of SR evidence	General consensus	Considered judgement
14 systematic reviews (7 SRs of Randomised-Control Trials; 7 Systematic review's of mixed study designs)	1 x high quality SR, very low risk of bias 1 x high quality SR, low risk of bias 8 x low quality SR, high risk of bias 4 x low quality SR, very high risk of bias	Inconclusive – conflicting results	- Mostly poor quality and high risk bias studies. - Study populations not elite/professional athletes so uncertain effect in the target clinical population - No convincing proof that PRP has any effect on tendon problems - Financial implications, cost:benefit ratio not justified - Potential harm is unknown - Pressure to consider use from media, players, agents

Graded recommendation:
D – insufficient evidence to recommend this strategy

Overall Conclusion:
Overall the systematic review suggests no evidence that PRP accelerates healing and/or time to return to play and/or RTP outcomes for tendinopathy related issues.
Further, a high financial cost seems evident for a process with limited evidence of success and as yet an unknown harm.

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