


Influence of Intramuscular Application of Autologous Conditioned Plasma on Systemic Circulating IGF-1

Gert Schippinger^{1,2},  Karl Oettl³, Florian Fankhauser², Stefan Spirk^{1,4}, Wolfgang Domej⁵, Peter Hofmann^{1,4}

[Author Information](#)[Publish Date](#)[How to Cite](#)[Email link to this article](#)

ABSTRACT

Platelet-rich plasma (PRP) to increase levels of platelets and growth factors has been used for the treatment of sports injuries suggesting to improve healing and regeneration. This method offers some potential especially for elite athletes. However, the insulin like growth factor-1 (IGF-1) is prohibited by the World Anti Doping Agency and, in addition, there may be a possible link between increased levels of IGF-1 and cancer risk. Aim of the study was to evaluate a systemic increase of IGF-1 after local intramuscular administration of PRP in young healthy moderately trained male subjects. Blood samples were drawn and PRP preparation was performed by means of centrifugation. Enriched plasma was injected into the gluteus muscle. Venous blood was collected and serum prepared before as well as after 0.5, 3 and 24 hours after PRP administration. IGF-1 analysis was performed applying an ELISA test kit. No significant systemic increase of mean IGF-1 was found after the PRP injection. Only one subject showed an increase after 24 h, but all IGF-1 values were found within reference limits. We conclude that a single intramuscular application of PRP does not significantly increase systemic IGF-1 levels. Therefore, a single application of PRP is safe with respect to systemic IGF-1 response and cancer risk and this should be allowed for treatment of muscle injuries in elite athletes.

Key words: Platelet rich plasma, intramuscular application, IGF-1, cancer risk, doping.

Key Points

- There is no increase of systemic IGF-1 levels after a single local intramuscular administration of PRP.
- Professional athletes and non-athletes alike can benefit from such a treatment option for muscle injuries and related sports injuries without an increased risk of cancer.
- More studies are warranted to provide definitive evidence to guide surgeon' s decision making regarding the appropriate use for PRP products.

HOME

Contact

Email alerts

ISSUES

Current

In Press

Archive

Supplements

Most Read

Articles

Most Cited

Articles

ABOUT

Editorial board

Mission

Scope

Statistics

AUTHORS

Authors

instructions

For Reviewers



JSSM | Copyright 2001-2018 | All rights reserved. | [LEGAL NOTICES](#) | [Publisher](#)

It is forbidden the total or partial reproduction of this web site and the published materials, the treatment of its database, any kind of transition and for any means, either electronic, mechanic or other methods, without the previous written permission of the JSSM.

This work is licensed under a  [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](#).