

Studies on Platelet Rich Plasma - New Editorial Policy for "Platelets"

Harrison, Paul; Alsousou, Joseph

DOI:

[10.1080/09537104.2020.1729013](https://doi.org/10.1080/09537104.2020.1729013)

License:

None: All rights reserved

Document Version

Peer reviewed version

Citation for published version (Harvard):

Harrison, P & Alsousou, J 2020, 'Studies on Platelet Rich Plasma - New Editorial Policy for "Platelets"', *Platelets*, vol. 31, no. 3, pp. 281–282. <https://doi.org/10.1080/09537104.2020.1729013>

[Link to publication on Research at Birmingham portal](#)

Publisher Rights Statement:

This is an Accepted Manuscript of an article published by Taylor & Francis in *Platelets* on 03/03/2020, available online: <http://www.tandfonline.com/10.1080/09537104.2020.1729013>

General rights

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- Users may freely distribute the URL that is used to identify this publication.
- Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

Take down policy

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact UBIRA@lists.bham.ac.uk providing details and we will remove access to the work immediately and investigate.

Studies on Platelet Rich Plasma - New Editorial Policy for “Platelets”

Paul Harrison¹ and Joseph Alsousou²

¹Institute of Inflammation and Ageing, University of Birmingham, B15 2TT, United Kingdom and ²Kadoorie Centre for Critical Care Research, John Radcliffe Hospital, Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, University of Oxford, Oxford, United Kingdom.

In the last few years we have noticed a significant increased number of manuscript submissions related to Platelet-Rich Plasma (PRP) to “Platelets”. PRP preparations are normally prepared from fresh autologous whole blood and usually contain a supra-physiological concentration of platelets. As platelets are of course vital for normal wound healing then this type of therapy could theoretically augment tissue healing with a wide number of potential clinical applications. PRP is therefore gaining an increased profile in both scientific and popular media in many areas of regenerative medicine. For example, many high profile sports stars have been routinely treated with PRP in an attempt to improve tissue regeneration in a variety of injuries. However, although many *in vitro* studies support the theoretical potential of PRP in tissue regeneration, the *in vivo* evidence is more variable. Despite efforts to improve standardization, there are also few large well controlled randomized clinical trials and the preparation, quality and contents of many platelet preparations in many studies are sometimes not fully defined. Given the growth of interest, a number of commercial devices are also increasingly available for preparing sterile preparations PRP for clinical therapies. As these devices often use different separation principles, the resulting PRP preparations are not standardized across different devices and therefore exhibit varying quantities, purity and quality of the platelets obtained. For example, many products often contain plasma but may sometimes also contain both white and red cells. PRP preparations may also be activated via a variety of methods prior to clinical use and therefore can contain fibrin and released platelet granular proteins which are of course important for their biological efficacy in wound healing. Defining the cellular and bioactive factor contents of different PRP preparations is therefore essential to understand the variables associated with the potential biological activity/efficacy of PRP preparations. A recent large (N = 230) randomized controlled trial (PATH-2) by the authors has recently demonstrated that a standardized Leukocyte Rich PRP (L-PRP) is not effective over placebo for improving the healing of Achilles Tendon Healing. This study has clearly set a standard in the field and also demonstrated the importance of monitoring the quality control of the PRP given to individual patients. Although the trial demonstrated that PRP did not enhance healing or quality of life over placebo, we demonstrated that the majority of patients in the treatment arm received an optimal L-PRP standardized preparation. We also demonstrated that the L-PRP contained a high concentration of platelets that were not activated with expected growth factor content. We would now like to highlight our newly proposed editorial policy for the minimum requirements for future manuscripts that include PRP and related products as their major focus.

All future submitted manuscripts on PRP utilised within both *in vitro* and *in vivo* settings (animal or human) should attempt to fully define the characteristics of the preparations used as much as is feasible but including :-

- 1) The source of blood or platelets whether autologous or allogeneic.
- 2) The anticoagulant, volume and age of blood used to prepare PRP.
- 3) The method principle used to prepare PRP.
- 4) The centrifugation conditions (i.e. g value, temperature and time) used in the laboratory or within commercial PRP preparation devices.
- 5) If a commercial preparation device is used then include the make, batch numbers of disposables used to prepare the PRP.
- 6) A full description of how the PRP is harvested (e.g. from buffy coats or PRP supernatants).
- 7) A measurement of the cellular content of the original whole blood and derived PRP including platelet count, white cell counts and Red cell counts and the methods used to count the cells.
- 8) The concentration factor and yield of platelets obtained.
- 9) A measure of quality of the PRP preparation (e.g. platelet activation status and/or platelet specific proteins or growth factor content).
- 10) Whether the PRP is activated prior to application either *in vitro* or *in vivo*.
- 11) The exact method used to activate the platelets before use.
- 12) Whether the final preparation used also contains fibrinogen or fibrin.

In summary by ensuring that all these variables are now included in papers this will improve standardization but allow comparisons to be made between studies. *In vivo* studies and trials should ideally also be appropriately controlled and adequately powered, but also take into account the content and quality control of the platelet preparations to ensure that clear correlations between the products and outcomes are established.

Declaration of Interest

The authors have no relevant conflict of interest to disclose

References