Reviewer's report

Title: Does PRP enhance bone-implant integration? A systematic review

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Reviewer: Rüdiger Junker

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Does PRP enhance bone-implant integration? A systematic review.
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In my opinion an interesting topic and paper.
However, in my view there is a need to improve the current report in the sense of major compulsory revisions.

Introduction:
In my opinion the aims of the current review should be described as:
1.) to analyze effects of PRP related to implant osseo- as well as soft tissue integration as published in clinical studies;
2.) to identify implant materials for which the additional use of PRP might be associated with superior osseo- and/or soft tissue healing;

Material and Methods:
1.) In my opinion the current systematic review should concentrate on RCTs (implant material versus implant material + PRP).
2.) There is a need for predefined outcome variables for the analysis of these studies.

For example, for studies reporting on sinuslift procedures:
a. The primary outcome variable could be:
Histomorphometric bone in growth [%] at a certain time point (e.g.: 6 weeks)
b. Secondary outcome variables might be:
(1) Histomorphometric bone in growth [%] at other certain time points (e.g.: 3 months, 6 months...)
(2) Radiographic bone density
(3) etc.

For example, for studies reporting on reconstruction of intrabony or furcation defects:
a. The primary outcome variable could be:
Vertical or horizontal bone level gain measured during a surgical re-entry
b. Secondary outcome variables might be:

1. Vertical or horizontal bone level gain measured by bone sounding (bone sounding v/h BLgain) [mm] at a certain time point (e.g.: 6 months)
2. CALgain [mm] at a certain time point (e.g.: 6 months)
3. PPDreduction [mm] at a certain time point (e.g.: 6 months)
4. etc.

Results:
1) The presentation of the findings per type of material as well as per type of surgery (as mentioned above e.g.: sinus lift, periodontal intrabony defects, periodontal furcation defects…) should follow the chosen outcome variables.

For example:
“In a RCT [variable author, year] treated 12 patients with 1 periodontal defect each with [variable material] (control) and 12 patients with 1 periodontal defect each with [variable material + PRP] (test). The study was ethical approved by the relevant [variable authority]. The used PRP was [variable product], was activated by [variable] and the application protocol was [variable]. Clinical measurements were performed at 6 months. For the control group the average CALgain at 6 months was 1.5 mm (SD: 1.3 mm) and for the test group the average CALgain at 6 months was 1.6 mm (SD: 1.2 mm). Furthermore, for the control group the average PPDreduction at 6 months was 3.5 mm (SD: 0.8 mm) and for the test group the average PPDreduction at 6 months was 3.6 mm (SD: 1.2 mm). These differences were statistically not significant (p>0.05).”

2) Beside RCTs the findings of not RCTs might be briefly mentioned.

3) If one aim of the paper is the identification of implant materials for which the additional use of PRP might be associated with superior osseo- and/or soft tissue integration, the results regarding this question should be mentioned in a separate section within the results.

Discussion:
In my opinion the discussion could start with repeating and briefly answering the original questions.

Thereafter, the current finding could be discussed per type of material as well as per type of surgery (as mentioned above e.g.: sinus lift, periodontal intrabony defects, periodontal furcation defects…).

In the moment the discussion nearly only duplicates and summarizes the results.

Conclusions:
The conclusions should address the found effects of PRP on:

1) Bone healing
2) Soft tissue healing
3) Implant materials for which the additional use of PRP might be of advantage regarding bone/soft tissue healing.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.