



ISSN NO. 2320-5407

ISSN(O): 2320-5407 | ISSN(P): 3107-4928

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

Manuscript No.: IJAR-56412

Title: Efficacy of Alb-PRF as Adjunctive to Non-surgical Periodontal Therapy in Management of Stage II Periodontitis

Recommendation:

Accept after major revision

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality			✓	
Clarity			✓	
Significance		✓		

Detailed Reviewer's Report

This randomized clinical trial compares mechanical debridement (MD) alone with MD plus injectable Alb-PRF in patients with Stage II periodontitis. The topic is relevant and timely, and the study is ethically approved and registered. Both groups improved over time, and the Alb-PRF group showed better site-specific probing depth (PD) reduction and clinical attachment level (CAL) gain.

However, several confirmed problems in statistics, reporting, and interpretation must be corrected before the manuscript can be accepted.

Major Issues

1. Unclear Unit of Analysis

The manuscript says PD and CAL were measured site-specifically, but it does not clearly state:

- How many sites per patient were included, or
- Whether more than one site per patient was analyzed

If multiple sites per patient were used, the statistical tests applied (t-tests and ANOVA) are not appropriate because they ignore clustering within patients.

The authors must:

- Clearly state the number of sites analyzed per patient

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- Use proper statistical methods (e.g., mixed-effects models) if more than one site per patient was included
- Clearly separate patient-level outcomes (PI, GI, BOP) from site-level outcomes (PD, CAL) throughout the manuscript

2. Incorrect Interpretation of PI and GI Results

The Discussion claims that plaque index (PI) and gingival index (GI) were statistically better in the Alb-PRF group. This is factually incorrect.

- Table 2 shows no significant difference between groups for PI ($p = 0.073$) and GI ($p = 0.108$) at 6 months.

The text must be corrected to state that:

- Both groups improved significantly over time
- There was no significant difference between groups for PI and GI
- This likely reflects good oral hygiene instruction in both groups

3. Confirmed Errors in Table 2 (Statistical Reporting)

Several clear errors exist in Table 2:

- BOP at 3 months shows $p = 0.825$ but is marked as significant (*) — this is incorrect
- Some p-values are written as “>0.001” when they should be “<0.001”
- Entries like “ $p3=<1.000$ ” are meaningless

The entire table must be carefully reviewed and corrected.

4. Missing CONSORT Flow Diagram and Dropout Information

This is a randomized controlled trial, but:

- No CONSORT flow diagram is provided
- There is no information on dropouts or losses to follow-up

It is unclear whether all 30 patients completed the study.

A CONSORT flow diagram showing screening, randomization, follow-up, and analysis is mandatory.

5. Sample Size Calculation Not Properly Justified

The effect size used for sample size calculation was taken from a curcumin gel study, which is not comparable to Alb-PRF.

The authors must:

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- Justify the chosen effect size using a biologically similar study (preferably platelet concentrates), or
- Clearly state this as a limitation and discuss its impact on study power

6. No Sham Injection — Risk of Performance Bias

The control group did not receive a sham injection. Patients in the Alb-PRF group underwent an additional procedure, which could have:

- Improved their motivation
- Changed oral hygiene behavior

This possible bias is not adequately discussed, especially regarding full-mouth outcomes like BOP.

7. Two-Week Delay Before Alb-PRF Injection Not Supported

Alb-PRF was injected two weeks after MD, explained as allowing inflammation to subside. This explanation is reasonable but not supported by any reference.

The authors must:

- Provide supporting literature, or
- Clearly state this as a study-specific clinical decision and discuss its limitations

Minor Issues

8. Abstract Problems

- PI, GI, and BOP results are not mentioned
- A typo exists: “Alb-PRFcompared” → “Alb-PRF compared”

9. Vague Exclusion Criteria

“Systemic disease affecting therapy outcome” is too vague. Specific excluded conditions (e.g., diabetes, immunosuppression, anticoagulant use) must be listed.

10. No Radiographic Assessment

The manuscript discusses “regeneration,” but no radiographic bone data are provided. This must be clearly acknowledged as a major limitation, as CAL gain alone does not confirm true regeneration.

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11. Clinical Importance Not Discussed

The differences between groups were:

- PD \approx 0.52 mm
- CAL \approx 0.58 mm

The authors must discuss whether these differences are **clinically meaningful**, especially since baseline pockets were shallow.

12. No Confidence Intervals

Only means and p-values are reported.

Confidence intervals for PD and CAL differences should be added to show precision.

13. Alb-PRF Preparation Details Incomplete

The protocol lacks details on:

- How 75°C temperature was verified
- Whether preparation was standardized across operators

This information is needed for reproducibility.

14. Over-Interpretation in Discussion

The Discussion attributes outcomes to Alb-PRF biology (denser scaffold, no rebound effect), but:

- No biological, microbiological, or histological data were collected

These claims should be presented as hypotheses, not proven mechanisms.

15. Language and Formatting Errors

Multiple typos, spacing issues, and incomplete sentences are present.

A full language and formatting revision is required.

Final Conclusion

This study addresses an important clinical question and shows promising site-specific results for Alb-PRF. However, statistical errors, incorrect interpretations, missing CONSORT reporting, and unclear analysis methods currently weaken the manuscript.

A thorough major revision is required before the study can be reconsidered for publication.