

REVIEWER'S REPORT

Manuscript No.: IJAR-54299

Date: 13/10/2025

Title: Platelet Concentrates in Dentistry: Biological and Clinical Insights — A Narrative Review

Recommendation:

Accept as it is

Accept after minor revision

Accept after major revision

.....

Do not accept (*Reasons below*)

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

Reviewer Name: Mrs. Shreya Vaz

Date: 13/10/2025

Reviewer's Comment for Publication.

The article presents a brief report of This narrative review comprehensively examines the biological mechanisms, technical protocols, and clinical applications of platelet concentrates—particularly platelet-rich fibrin (PRF) and its advanced formulations (A-PRF, A-PRF+, i-PRF, C-PRF)—in dentistry. The authors synthesize evidence on centrifugation parameters (RCF and tube materials), growth factor release profiles, and outcomes across oral surgery, implantology, periodontology, and endodontics. The review highlights PRF's advantages over platelet-rich plasma (PRP), including simplified preparation, absence of anticoagulants, sustained growth factor delivery, and cost-effectiveness. Future directions emphasize protocol standardization, transparent reporting, integration with biomaterials and bioprinting, and personalized approaches based on patient factors (e.g., hematologic parameters, medications).

Detailed Reviewer's Report

This article is based comprises a brief contents.

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

This narrative review comprehensively examines the biological mechanisms, technical protocols, and clinical applications of platelet concentrates—particularly platelet-rich fibrin (PRF) and its advanced formulations (A-PRF, A-PRF+, i-PRF, C-PRF)—in dentistry. The authors synthesize evidence on centrifugation parameters (RCF and tube materials), growth factor release profiles, and outcomes across oral surgery, implantology, periodontology, and endodontics. The review highlights PRF's advantages over platelet-rich plasma (PRP), including simplified preparation, absence of anticoagulants, sustained growth factor delivery, and cost-effectiveness. Future directions emphasize protocol standardization, transparent reporting, integration with biomaterials and bioprinting, and personalized approaches based on patient factors (e.g., hematologic parameters, medications).

Strengths

- Comprehensive Scope and Clarity: The manuscript covers basic biology, technical considerations, and diverse clinical applications, offering a clear narrative structure from introduction through conclusions.
- Technical Detail: Detailed comparison of centrifugation protocols (e.g., low-speed A-PRF vs. standard PRF) and the impact of tube composition on bioactivity strengthen reproducibility.
- Clinical Relevance: Inclusion of evidence-based recommendations (e.g., report RCF instead of RPM; prefer glass tubes; standardize compression time) provides actionable guidance for practitioners.
- Balanced Discussion: The authors acknowledge limitations—including protocol heterogeneity, lack of long-term outcome data, and absence of formal risk-of-bias assessment—and propose realistic future research priorities.

Weaknesses and Suggestions for Improvement

Lack of Quantitative Meta-Analysis:

- While narrative synthesis is appropriate, incorporation of pooled effect sizes (e.g., for implant stability, CAL gain) from recent systematic reviews would strengthen evidence grading. Consider including a summary table with effect estimates where available.

Incomplete Reporting of Protocol Variability:

- The section on advanced formulations would benefit from a more detailed table specifying rotor radius, relative centrifugation force, and exact spin times for each protocol (beyond the summary in Table 1) to aid standardization efforts.

Risk-of-Bias Assessment:

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

- Although formal registration was not undertaken, a brief risk-of-bias appraisal (e.g., using ROBINS-I for nonrandomized studies) could enhance the review's rigor and help readers interpret clinical outcome data.

Patient-Centered Outcomes:

- Most reported benefits focus on surgical metrics (e.g., wound healing, growth factor release). Incorporating patient-reported outcome measures (e.g., pain scales, quality of life) would provide a more holistic evaluation.

Emerging Technologies Section:

- The discussion of bioprinting and stem cell integration is insightful but could be expanded with specific examples or preliminary data to illustrate feasibility and current limitations.

Minor Points

- Ensure consistent use of MeSH terms in keywords (e.g., "Leukocyte- and platelet-rich fibrin" to match title).
- Correct minor typographical errors (e.g., "A-PRF+" is sometimes written without the plus sign).
- Update references with the most recent publications from 2025 where available to reflect the latest clinical trials.

Conclusion

This manuscript presents a well-organized and informative narrative review of platelet concentrates in dentistry, with valuable clinical recommendations. Addressing the points above—particularly the inclusion of quantitative syntheses and risk-of-bias assessment—would enhance the review's methodological rigor and practical impact.

References; All the references are provided