

INPLASY PROTOCOL

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The authors declare that there was no conflict of interest in the elaboration of this study.

Use of Platelet-Rich Fibrin for the treatment of intrabony and furcation defects: A systematic review and meta-analysis

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Review question / Objective: What is the effectiveness of PRF for the treatment of periodontal intra bony defects and furcation defects?

Condition being studied: Periodontal intrabony and furcation defects.

Information sources: PubMed/MEDLINE, the Cochrane Central Register of Controlled Trials, Scopus, Embase, and Lilacs were used to search for articles that were published before June 2020 without other restrictions regarding date or language. A search of the gray literature using the Literature Report and OpenGrey databases was also conducted. Finally, the study reference lists were evaluated (cross-referenced) to identify other studies for potential inclusion.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 27 July 2020 and was last updated on 27 July 2020 (registration number INPLASY202070117).

INTRODUCTION

Review question / Objective: What is the effectiveness of PRF for the treatment of periodontal intra bony defects and furcation defects?

Rationale: The aim of this systematic review and meta-analysis was to compare the use of platelet-rich fibrin (PRF) with other commonly utilized modalities for the treatment of intrabony and furcation defects.

Condition being studied: Periodontal intrabony and furcation defects.

METHODS

Search strategy: The search-and-screening process was conducted by two independent reviewing authors (R.J.M and V.M.), commencing with the analysis of titles and abstracts. Next, full papers were selected for careful reading and matched with the eligibility criteria for future data extraction. Disagreements between the reviewing authors were resolved through careful discussion.

Participant or population: Systemically healthy humans with periodontal intra bony defects (two or three walls) or furcation defects (I or II degree).

Intervention: Surgical treatment of bone defects through the use of PRF alone or in combination with other biomaterials.

Comparator: PRF vs. open flap debridement (OFD) alone or in combination with other biomaterials.

Study designs to be included: Randomized clinical trials.

Eligibility criteria: Systemically healthy humans with periodontal intra bony defects (two or three walls) or furcation defects (I or II degree) treated through PRF alone or in combination with others biomaterials.

Information sources: PubMed/MEDLINE, the Cochrane Central Register of Controlled Trials, Scopus, Embase, and Lilacs were used to search for articles that were published before June 2020 without other restrictions regarding date or language. A search of the gray literature using the Literature Report and OpenGrey databases was also conducted. Finally, the study reference lists were evaluated (cross-referenced) to identify other studies for potential inclusion.

Main outcome(s): The outcome variable was the change in pocket depth (PD),

clinical attachment level (CAL) and bone fill (BF).

Quality assessment / Risk of bias analysis: Two reviewing authors (V.M. and M.D.C.M.) analyzed the risk of bias. The RoB 2 (a revised Cochrane risk-of-bias tool for randomized trials) was used to analyze the risk of bias in RCTs. Each study was analyzed in relation to five domains: risk of bias arising from the randomization process, risk of bias due to deviations from the intended interventions, missing outcome data, risk of bias in the measurement of the outcome, and risk of bias in the selection of the reported research. Studies were classified as having a low risk, some concerns, or high risks of bias for each domain. The overall risk of biased judgment used the following criteria: low risk, when the five areas of the study were judged as low risk; some concerns, when the study is judged as raising some concerns in at least one area; and high risk, when the study is judged to be at high risk in at least one domain or when the study is judged to have some concerns for multiple domains in a way that substantially lowers confidence in the result.

Strategy of data synthesis: The study data were extracted by R.J.M. and M.F.K. and systematically reviewed by V.M. The following data, when available, were extracted from the included studies: authors, study design, follow-up, number of treated intra bony defects, number of treated furcation defects, type of bone defects, number of subjects, age range, gender, number of smokers, surgical technique, mean difference (MD) in PD, CAL, BF, centrifugation system, volume of blood drawn, and centrifugation parameters.

Subgroup analysis: Research participants treated with PRF compared to other types of biomaterials.

Sensibility analysis: Potential heterogeneities will be explored through specific tests (chi-squared and Egger tests) and by excluding of outliers.

Language: There is no language restriction.

Country(ies) involved: Brazil, United States of America, Switzerland.

Keywords: Intrabony defect; Furcation defect; platelet-rich fibrin; L-PRF; Advanced-PRF.

Contributions of each author:

Author 1 - Vittorio Moraschini - Conceptualization, Data curation, Metodology, Software, Validation, Writing original draft.

Author 2 - Richard Miron - Conceptualization, Data curation, Writing - review & editing.

Author 3 - Anton Sculean - Project administration, Supervision, Validation, visualization, Writing - review & editing.