



CHILDREN'S EDUCATION SOCIETY (Regd.)

THE OXFORD DENTAL COLLEGE

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Bommanahalli, Hosur Road, Bangalore - 560 068.

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Criteria 7- Institutional Distinctiveness



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Cost-effective in-house aligners have been introduced by the Department of Orthodontics at The Oxford Dental College and Hospital for various malocclusions. These aligners are less expensive compared to conventional 3D-printed company aligners. It was started in 2021 and it benefited 3 patients effectively to date. In this process, aligners are prepared by manually setting the teeth in an articulator. The company aligners cost around 1-2 lakhs, but these in-house aligners can be fabricated at 1/10th the price of company aligners.

The utilization of cost-effective in-house aligners for malocclusions offers significant benefits to patients. It provides necessary orthodontic care without imposing a significant financial burden on them, thereby reducing their out-of-pocket expenses. In-house aligners also provide greater convenience, which leads to improved patient satisfaction and adherence. Ultimately, patients receive personalized, accessible, and convenient treatment that can improve their oral health and quality of life.

Enhancing Quality of Life/reducing out of pocket expenditure :

In-house aligners offer patients seeking orthodontic treatment a discreet and convenient alternative to traditional braces. These custom-made clear aligners are virtually invisible, removable, and require fewer office visits, allowing patients to maintain good oral hygiene and busy schedules. Platelet-rich fibrin therapy has been shown to be particularly beneficial for patients with chronic periodontitis, a type of periodontal disease that causes inflammation and destruction of the gums and bone supporting the teeth. Chronic periodontitis is a long-lasting and progressive disease that can cause pain and discomfort, difficulty eating and speaking, and can lead to tooth loss. PRT can help to reduce inflammation, promote tissue regeneration, and accelerate the healing process in patients with chronic periodontitis. Both PRT and in-house aligners can improve the quality of life for patients, as PRT reduces the severity of chronic periodontitis and in-house aligners enhance aesthetics and self-esteem in orthodontic treatment.

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Manual teeth set up



Biostar thermoforming machine



Aligner delivery



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Patients treated with in-house aligners

Sl.no	Patient Name	OP number	Age/gender
1	Achutha	D095727	22/Female
2	Madhvi	D009725	27/Female
3	Noor Mohammed	D011184	18/Male



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The department of periodontology has taken the initiative to encourage the use of regenerative therapy in the field of periodontal medicine. The use of autologous platelet rich fibrin and platelet rich plasma in the treatment of intrabony defects, the clinical effects of subgingivally delivered simvastatin and clinical efficacy of 1% alendronate gel as a local gel delivery system in the treatment of chronic periodontitis are some of the examples of regenerative medicines. Molecular markers in periodontitis and their association with systemic disease is at the forefront of research in this department

Platelet Rich Fibrin with 1% Metformin for the Treatment of Intrabony Defects in Chronic Periodontitis: A Randomized Controlled Clinical Trial

Dr. A R Pradeep MDSC, Dr. Rakesh Prasad BDS (MSc)*, Dr. Shiva Karvilar BDS (MSc)*, Dr. Kavitha Parvath BDS (MSc)*, Dr. Saritha B. Nish MDSc, Dr. C N Anandaprasad MDSc

*Department of Periodontics, Government Dental College and Kennedy Institute Hospital, Bangalore, Karnataka, INDIA.

†Department of Conservative Dentistry and Endodontics Government Dental College and Kennedy Institute Hospital Bangalore, Karnataka, INDIA.

Background: Platelet rich fibrin (PRF) is a natural growth factor rich fibrin matrix which is naturally formed during normal coagulation. Metformin (MF) is known to improve platelet function and to reduce oxidative stress and thus may enhance the regenerative effect of PRF. The current study was designed to evaluate the efficacy of PRF + MF gel and PRF + 1% MF gel versus the autologous PRF (APRF) in the treatment of intrabony defects in chronic periodontitis (CP).

Methods: One hundred and sixteen patients with single bony defects were randomized into treatment groups: PRF alone (PRF), PRF with 1% MF and PRF + 1% MF. Clinical parameters like site specific clinical index (SICI), modified index bleeding index (MIBI), probing depth (PD), alveolar bone level (ABL) and gingival margin level (GML) were measured at baseline, before surgery and 9 months post-operatively. Percentage radiographic bone loss, radiographic bone gain and radiographic defect volume were also measured at baseline and 9 months.

Results: PRF + 1% MF and PRF + 1% MF groups showed significant PRF reduction and ABL gain after 9 months. Mean PD reduction and mean MIBI gain were found to be greater in PRF + 1% MF group as compared to PRF alone at 9 months. Radiographic ABL gain in PRF group was significantly greater than PRF alone at 9 months. Radiographic MIBI gain in PRF group was significantly greater than PRF alone at 9 months. Radiographic GML gain in PRF group was significantly greater than PRF alone at 9 months.

Conclusion: PRF + 1% MF group showed greater improvement in clinical parameters with greater radiographic bone gain and radiographic ABL gain as compared to PRF alone. PRF alone or PRF alone + metformin is ineffective in CP patients.

KEYWORDS:

Periodontal surgery, Periodontal Regeneration, Growth factors, Clinical trials.

Periodontal disease is a link by prolonged inflammation of the periodontium resulting in connective tissue attachment loss and alveolar bone resorption.¹ Regeneration of the lost periodontium is the fundamental objective of periodontal therapy.² While agents of successful periodontal regeneration can be found throughout the periodontium, there are no better than the traditional surgical or non-surgical approaches to periodontitis do not generally lead to regeneration.³

Currently a novel approach to attain periodontal regeneration is the use of platelet concentrates that release proangiogenic growth factors (PGFs) that have the ability to regulate cell proliferation, chemotaxis, and differentiation, which may directly contribute to formation of new tissues.⁴

Platelet rich fibrin (PRF), a natural growth factor concentrate was first developed by Choukroun and co-workers as a locally administered fibrin network containing components like fibrinogen, fibrin, fibronectin and laminated glycoproteins. After being in testing,⁵ these PRF-based gels for their potential during the remodeling of the site in osseous.⁶ Further testing is

Platelet-Rich Fibrin With 1.2% Rosuvastatin for the Treatment of Intrabony Defects in Chronic Periodontitis: A Randomized Controlled Clinical Trial

1. Dr. A R Pradeep MDSc, 2. Dr. Vidhali Jayajith BDS (MSc)*, 3. Dr. Bhramanika Kanavva BDS (MSc)*, 4. Dr. Suresh Sankar BDS (MSc)*

*Department of Periodontology, Government Dental College and Research Institute, Bangalore MDRI, Karnataka, INDIA.

Background: Regenerative periodontal therapy encompasses the use of various therapies applied to an oral site which encompasses autologous conditioned serum or other regenerative. The regenerative factor group of drugs, statins (Rosuvastatin (RSV)), are known to be associated with elevated bone formation and periodontal regeneration. Platelet rich fibrin (PRF), being rich source of growth factors, there are also seen to be a potent periodontal regenerative gel. The aim of this study is to evaluate and compare the efficacy of combination of RSV with or without PRF or RSV + 1.2% RSV gel in the treatment of intrabony defects in chronic periodontitis (CP) patients.

Methods: Ninety patients with single bony defects were randomized into two groups: PRF alone (PRF), modified index bleeding index (MIBI), probing depth (PD), clinical attachment level (CAL) and ABL gain were recorded at baseline and 9 months post-operatively.

Results: Significant PRF and ABL gain were observed in all the groups. PRF showed significant improvement in the improvement in periodontal parameters such as PD, mean. Addition of 1.2% RSV gel to PRF resulted in significant gain in ABL gain and PRF showed significant improvement in clinical parameters in CP patients.

Conclusion: 1.2% RSV with PRF results in significant greater periodontal benefits compared to PRF alone in CP patients.

KEY WORDS:

Regenerative options, Chronic periodontitis, Periodontal regeneration.

Chronic periodontitis (CP) comprises a group of multifactorial diseases of which infectious-epithelial dysbiosis is the most common. Elongating root structure in periodontitis impinges against periodontal structures that obstruct the disease process, including bone resorption and ultimately tooth loss.¹

Various non-surgical and surgical therapies from the realm of periodontal treatment² have been used to achieve this objective. However, the aim of regenerative periodontal treatment is to restore form and function.³ Intrabony defects (IBDs) viewed as a result of periodontal disease, are amenable to regenerative therapy using various therapeutic agents.⁴

Choukroun's platelet rich fibrin (PRF), a natural growth factor concentrate, consists of a dense network of fibrin polymerized containing fibronectin, glycoprotein and glycosaminoglycan, and is known to promote bone cell and bone tissue healing.⁵ It had been found to be associated with significant clinical-radiographic improvements in various animal models,^{6,7} mainly in the repair of defects, post-surgical bone and periodontal sites,^{8,9} as well as in other bone regeneration.¹⁰

Statins (hydroxymethylglutaryl coenzyme A (HMG)-CoA reductase inhibitor drugs) like Rosuvastatin (RSV) are an important class of bone-modulating agents, commonly used in patients to improve lipid profile leading to their anti-inflammatory and osteoblast properties.¹¹ Their osteomodulatory action has led to their use in periodontal regeneration.¹²

Platelet Rich Fibrin Combined With 1.2% Atorvastatin for Treatment of Intrabony Defects in Chronic Periodontitis: A Randomized Controlled Clinical Trial

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§Department of Periodontology, Government Dental College & Research Institute, Bangalore MDRI, Karnataka, INDIA.

Background: Platelet rich fibrin (PRF) is a natural growth factor rich fibrin matrix which is naturally formed during normal coagulation. Atorvastatin (ATV) is known to improve platelet function and to reduce oxidative stress and thus may enhance the regenerative effect of PRF. The current study was designed to evaluate the efficacy of PRF + ATV gel and PRF + 1.2% ATV gel versus the autologous PRF (APRF) in the treatment of intrabony defects in chronic periodontitis (CP) patients.

Methods: Ninety patients with single bony defects were randomized into two groups: PRF with PRF + 1.2% ATV and PRF + 1.2% ATV alone. Clinical parameters like site specific clinical index (SICI), modified index bleeding index (MIBI), probing depth (PD), alveolar bone level (ABL) and gingival margin level (GML) were measured at baseline before surgery and 9 months post-operatively. Percentage radiographic bone loss, radiographic bone gain and radiographic defect volume were also measured at baseline and 9 months.

Results: PRF + 1.2% ATV and PRF alone showed significant PRF reduction and ABL gain as compared to PRF alone at 9 months. Addition of 1.2% ATV gel to PRF resulted in significant improvement in clinical parameters with greater radiographic bone gain and radiographic ABL gain as compared to PRF alone at 9 months. Radiographic MIBI gain in PRF group was significantly greater than PRF alone at 9 months. Radiographic GML gain in PRF group was significantly greater than PRF alone at 9 months.

Conclusion: PRF + 1.2% ATV group showed greater improvement in clinical parameters with greater radiographic bone gain and radiographic ABL gain as compared to PRF alone. PRF alone or PRF alone + metformin is ineffective in CP patients.

KEYWORDS:

Periodontal surgery, Periodontal Regeneration, Growth factors, Clinical trials.

Periodontal disease is a link by prolonged inflammation of the periodontium resulting in connective tissue attachment loss and alveolar bone resorption.¹ Regeneration of the lost periodontium is the fundamental objective of periodontal therapy.² While agents of successful periodontal regeneration can be found throughout the periodontium, there are no better than the traditional surgical or non-surgical approaches to periodontitis do not generally lead to regeneration.³

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DEPARTMENT OF ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

CIRCULAR

13/4/2022

This is to inform that the Department of Orthodontics and Dentofacial Orthopedics has treated the following patients- Achutha, Madhvi, Noor Mohammed using in house aligners at Oxford Dental college and Hospital.

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