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ORIGINAL ARTICLE

CLINICAL APPLICATIONS OF INJECTABLE PLATELET RICH FIBRIN (IPRF) IN ADJUVANT THERAPY FOR PERIODONTITIS: A CASE SERIES

Valeri Tatintsyan,[1] Lyudmila Tatintsyan,[2*] Minas Poghosyan,[2] Armen Shaginyan,[3] Hovhannes Gevorgyan,[3] Biayna Hoveyan,[3] Tatevik Margaryan,[3] Nvard Vanyan[4]

[1] Professor, Department of Therapeutic Stomatology Yerevan State Medical University after M. Heratsi, Yerevan, Armenia
[2] Associat Professor, Department of Therapeutic Stomatology Yerevan State Medical University after M. Heratsi, Yerevan, Armenia
[3] Lecutuer, Department of Therapeutic Stomatology Yerevan State Medical University after M. Heratsi, Yerevan, Armenia
[4] Associat Professor, Department of Prosthodontics, Yerevan State Medical University after M. Heratsi, Armenia

** Corresponding author: Associat Professor Lyudmila Tatintsyan Department of Oral and Maxillofacial Surgery, Yerevan State Medical University after M. Heratsi, Armenia;*
e-mail: l_tatintsyan@yahoo.com

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Abstract

The purpose of this study is to evaluate the clinical outcomes of non-surgical periodontal therapy using injectable Platelet Rich Fibrin (iPRF).

Materials and Methods: In the present study, analyzed the results of treatment in 82(43 men and 39 women, aged 36 to 63 years) patients in the period from 2018 to 2023 years with periodontitis stages I–II were included. The following clinical parameters were recorded at the beginning of the study (before and treatment), after 1 month (after iPRF therapy), at the end of the 3-month (after iPRF therapy). The diagnosis of periodontitis was established taking radiological signs of bone loss and indicators of bleeding on probing (BOP), probing depth (PD), Clinical attachment level (CAL). All patients subjected to the complex periodontal treatment included supragingival and subgingival scaling and root debridement with an ultrasonic device, antibacterial therapy. After 4 weeks, only those patients underwent I-PRF therapy who maintained optimal oral hygiene. I PRF was injected into the gum area. The number of plasma-based sessions is strictly individual and depends on the severity of the inflammatory process (4-6 sessions break between sessions 1 week).

Results: The postoperative periods in all patients passed without complications, there were no serious intraoperative or immediate postoperative complications. After a course of I-PRF therapy, patients noted elimination of pain, bleeding and swelling of the gums, tooth mobility became less bad breath disappeared, loss of bone tissue stopped. The first changes in the gums are noticeable on the 7th-10th day. The clinical picture and diagnostic parameters were comparable at baseline and after treatment. The clinical periodontal parameters (BOP, PPD, CAL) were shown a reduction in their mean values after 3 months from the treatment with the PRP, with a highly significant difference no complications had been observed.

The mean value BOP before treatment was 2.6 ± 0.32, after 1month treatment the mean BOP 1.8 ± 0.2, after 3 months treatment the mean BOP 1.4 ± 0.15. The mean value PPD before treatment was 5.41 ± 0.77 mm, 1 month after therapy it was 4,27 ±0.38 mm and 3 month after therapy it was 2.46 ± 0.42 mm. The mean value CAL before treatment was 5.84 ± 0.79 mm, 1 month after therapy it was was 4.92 ± 0.71 mm. and 3 months after therapy it was 3,4 ± 0,7 mm.

Conclusion: This study confirmed that iPRF periodontal therapy can be successfully used in patients diagnosed with I-II periodontitis who have received individualization supportive periodontal therapy and regular periodontal maintenance. The use of iPRF in periodontal therapy represents a valuable minimally invasive adjunct to complex conservative therapy.

Keywords: *periodontitis, non-surgical periodontal therapy, injectable Platelet Rich Fibrin (iPRF)*

Introduction

Periodontitis is the most common localized gingival inflammatory process of multifactorial etiology and, reaches its peak at the age of 30–45 years.[1-3]

American Academy of Periodontology (AAP) and the European Federation of Periodontology (EFP) a new classification of periodontal and peri-implant diseases was adopted.[4,5]

Clinical manifestations of periodontitis are accompanied by the destruction of the alveolar bone and periodontal ligaments.

Bacteria associated with periodontitis that contribute to the onset and progression of periodontitis include Porphyromonas gingivalis, Tannerella forsythia, Treponema denticola, Fusobacterium nucleatum, Aggregatibacter actinomycetemcomitans, and Prevotella.[6,7]

In addition to pathogenic bacteria, host- and environmental-specific risk factors influence disease progression.

In the etiology of periodontitis, an important role is also played by poor oral hygiene, alcohol and tobacco use and genetic factors also.[8-10]

Pathogenic bacteria living in complex biofilms cause and perpetuate this disease in susceptible hosts.

In periodontitis, microbes that colonize the biofilm of the tooth and the gingival pocket lead to host immunomodulatory reactions, release toxic products that activate certain cytokines, pro-inflammatory mediators and macrophages, which will lead to the destruction of periodontal tissues and subsequently leads to tooth loss.[11,12]

The treatment of periodontal disease is a major challenge as infection occurs due to a bacterial biofilm that is highly resistant to antimicrobials and body response. The treatment of periodontal disease has undergone a number of changes over the past 20 years. Various treatment options for periodontitis are available, including non-surgical therapy (scaling, root planning), various systemic and local antibiotics and antimicrobials, tissue engineering, photodynamic therapy, etc.[13-23]

Conservative treatment is aimed at stopping inflammation, eliminating periodontal pockets and introducing the process into a phase of stable remission.[25,26]

It consists of the following manipulations:

- hygienic
- therapeutic
- physiotherapy
- orthopedic
- orthodontic

It is very important that the treatment is carried out according to the plan, comprehensively and in stages - this will allow you to achieve results in a shorter time.

The use of a biochemical preparation containing proteins secreted during the formation of the crown and root parts of the tooth (Emdogain®) is applied to the exposed surface of the tooth root after raising the gingival flap and removing inflamed tissues. Proteins in the composition of the drug adhere to the root surface and migrate from it over time, contributing to the induction of stem cells, which are transformed into cells capable of restoring the tissues of the tooth attachment apparatus.[26]

To limit areas where pathogenic bacteria can hide, uneven surfaces of damaged bone are smoothed.[27.28]

In the complex treatment of the disease are used also surgical methods of treatment, including (periodontal surgery, transplantation of soft and bone tissues, stimulation of tissue proteins).

The goal of the periodontal surgeon is to provide direct access to the affected area (periodontal pocket) and resect the gingiva and cratered bone to reduce pocket depth and create uniform bone contours.[29-31]

Thus, the choice of treatment tactics depends on the stage of the disease. Present time for the treatment and prevention of periodontitis plasma therapy technique that can be used in combination with various therapeutic methods and drugs, including antibacterial anti-inflammatory, immunomodulatory.

Platelet concentrates have been utilized in dentistry and medicine for over three decades due to their ability to release supra-physiological doses of autologous growth factors.[32,33]

1970, fibrin adhesives were introduced which had clinical applications for local hemostasis and tissue sealing, soft tissue and melting agents for bone substitutes.[34,35]

In 1954, Kingsley's introduction of platelet concentrate became known as Platelet-Rich Plasma (PRP).[36]

The regenerative potential of platelets was initially introduced in 1974 by Ross et al.[37] It was proposed that platelet-derived growth factor (PDGF) serves as growth factor on fibroblasts, smooth muscle cells, and glial cells.

Platelet Rich Fibrin (PRF) was developed in the year 2001 by Choukroun J from then its application in dentistry and other specialities have exponentially increased.[38]

The platelets contain biologically active proteins that create a chemotactic gradient to recruit stem cells that undergo differentiation and promote healing through regeneration. The use of autologous platelet concentrates opens up a promising treatment option in the field of periodontal regeneration.[39]

Depending on the content of leukocytes and fibrin in them, they are classified into four categories of different platelet concentrates: pure platelet-rich plasma (P-PRP), such as cell separator PRP, Vivostat PRF or Anitua's PRGF; leucocyte- and platelet-rich plasma (L-PRP), such as Curasan, Regen, Plateltex, SmartPReP, PCCS, Magellan or GPS PRP; pure plaletet-rich fibrin (P-PRF), such as Fibrinet; and leucocyte- and platelet-rich fibrin (L-PRF), such as Choukroun's PRF.

PRF therapy, as a natural method of dealing with various diseases, when the positive effect of plasma on various organ systems was discovered.

PRF technique, is successfully used in the treatment of atrophic, inflammatory diseases of the oral cavity, as well as to optimize and accelerate bone tissue regeneration during implantation and osteoplastic surgery.

The task of PRF is to achieve not just the removal of the inflammatory process of the periodontium, but to start the process of natural restoration of the color, shape and structure of the gums, and prevent bone loss. It was created as a thrombocytopenia treatment.

Published in 1988, Marks et al. discuss the results proposed the growth factor present in PRP and its concentration.[8,40]

PRF is prepared from immediate centrifugation of blood after collection in a glass tube in 3000 rotations per minute (RPM) for 10 minutes. With blood segregation, 3 compartments are formed: the upper one is platelet-poor plasma, the middle one is platelet-rich fibrin with a buffy coat, and the lower compartment is erythrocytes. The middle PRF contains a fibrin matrix in which the majority of platelets and leukocytes are entrapped along with circulating stem cells. This also enmeshes the cytokines released from activated platelets and leukocytes like transforming growth factor, vascular endothelial growth factor, platelet derived growth factor, beta defensins etc. These cytokines, especially the growth factor, are thought to be responsible for the enhanced healing and regenerative potential of PRF with the fibrin matrix additionally playing a crucial role in facilitating the healing process.

Literature evidence shows beneficial effects of PRF in a variety of periodontal applications flap surgery, intrabony defects, furcation defectsInjectable platelet rich fibrin. PRF has been utilized for the treatment of extraction sockets, gingival recessions, palatal wound closure, the regeneration of periodontal defects, and hyperplastic gingival tissues.[39,41-45]

Substances released from platelets contribute to tissue repair, angiogenesis, inflammation and immune response.[46,47] Secreted proteins within a developing fibrin mesh can create chemotactic gradients favoring the recruitment of the stem cells, stimulating cell migration, differentiation, and promoting repair.[48] Thus the use of autologous platelet concentrates is a promising application in the field of periodontal regeneration and can be used in clinical situations requiring rapid healing.

Injectable platelet-rich fibrin (iPRF) is the most recent and successful advancement in PRF.[49-53] In essence, it was created by slowing down the liquid-based centrifugation approach and omitting the formation of a PRF membrane.

I-PRF was developed as an advanced product of PRF by altering the centrifugation protocol by lowering the centrifugation speed and force to 700 rotations per minute (RPM) and 40 grams of force.[54] This results in segregation of the blood into 2 compartments: the top layer being the liquid platelet rich fibrin (Liquid PRF) and the bottom red blood cells.

According to a study by Miron et al., platelet-rich plasma can be replaced by I-PRF.[55] It includes the expression of increased platelet growth (PDGF),

transforming food growth (TGF), collagen 1, and fibroblast infiltration.[56]

The purpose of this study is to evaluate the clinical outcomes of non-surgical periodontal therapy using injectable Platelet Rich Fibrin (iPRF).

Materials and Methods

In the present study, analyzed the results of treatment in 82(43 men and 39 women, aged 36 to 63 years) patients in the period from 2018 to 2023 years with periodontitis stages I–II were included.

The following clinical parameters were recorded at the beginning of the study (before and treatment), after 1 month (after iPRF therapy), at the end of the 3-month (after iPRF therapy).

The diagnosis of periodontitis was established taking radiological signs of bone loss and indicators of bleeding on probing (BOP), probing depth (PD), Clinical attachment level (CAL).

Exclusion criteria: Patients with history of systemic conditions like diabetes, patients under medications, patient did not come back for follow, patient smoke more than one pack per week excluded from the study, a pathological condition in the area, and patients on medications such as anti-inflammatory drugs or antibiotic treatments within the past 3 months.

The diagnosis of periodontitis was established taking radiological signs of bone loss and indicators of bleeding on probing (BOP), probing depth (PD), Clinical attachment level (CAL).

The following Clinical parameters were recorded at the beginning of the study (before any treatment), after 1 month (after i PRF therapy), at the end of the 3-month (after i PRF therapy).

Complex periodontal treatment included supragingival and subgingival scaling and root debridement with an ultrasonic device, antibacterial therapy. Orally with duration of 7-10 days, scribed systemic antibiotics (amoxicillin 500 mg and metronidazole 200 mg or augment in 875 mg or ciprofloxacin 250 mg).

After 4 weeks, only those patients underwent I-PRF therapy who maintained optimal oral hygiene. I PRF was injected into the gum area. The number of plasma-based sessions is strictly individual and depends on the severity of the inflammatory process (4-6 sessions break between sessions 1 week).

Platelet rich plasma preparation and injection

I-PRF 20 ml of peripheral venous blood was collected from the median cubital vein after thorough asepsis of the antecubital fossa using surgical spirit (Figure 1). 2 sterile glass coated plastic vacutainer tubes (Choukroun original I-PRF tubes) without anticoagulant were used. 10 ml blood was withdrawn using butterfly cannula (BC 12) into each tube.

The tubes were placed centrifuge and then immediately centrifuged (centrifuge PRF, Nice, France) at 700 rpm for 3 mins (Figure 2).

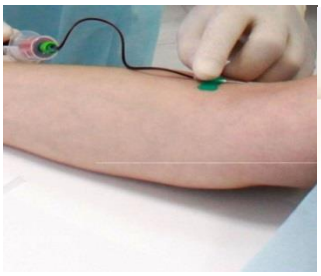

Figure 1. *Blood withdrawal*

Figure 2. *I-PRF tubes placed in the Choukrons process*

After the centrifugation cycle was complete, the tubes were removed from the centrifuge and placed on PRF tube stand (Figure 3 a, b). Two fluid layers were visible, upper being yellow fluid layer I-PRF (containing fibrin network with leukocytes, platelets and growth factors) while lower layer being red (containing red blood cells).

A sterile insulin syringe of 30 gauge was used to aspirate the yellow fluid layer containing I-PRF).

Figure 3a. *Two fluid layers formed; yellow fluid layer I-PRF, red fluid of RBCs*

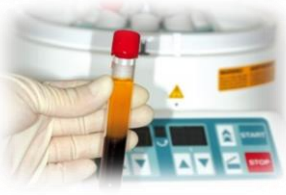

Figure 3b. *Two fluid layers formed; yellow fluid layer I-PRF, red fluid of RBCs*

Platelet rich plasma application

A 1 ml of I-PRF fluid was injected into the gingiva area using the insulin syringe (Fig 4). The number of plasma-based sessions is strictly individual and depends on the severity of the inflammatory process (4-6 sessions reak between sessions 1 week).

Figure 4. *I PRF injection on the affected area*

Statistical analysis: Statistical analyzes were performed using SPSS (SPSS Software, USA). The p values <0.05 were considered statistically significant. Differences between observation periods were checked using the paired Student's t test.

Results

The postoperative periods in all patients passed without complications, there were no serious intraoperative or immediate postoperative complications.

The clinical picture (figures 5, 6) and diagnostic parameters (figures 7, 8) were comparable at baseline and after treatment.

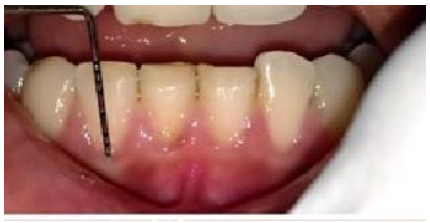

Figure 5. *PPD before periodontal therapy*

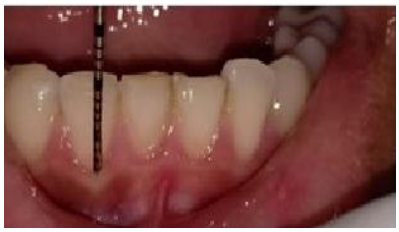

Figure 6. *PPD 3 months after periodontal therapy*

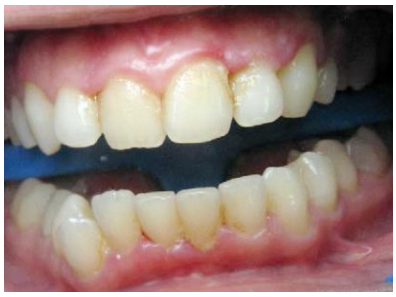

Figure 7. *Clinical picture before periodontal therapy*

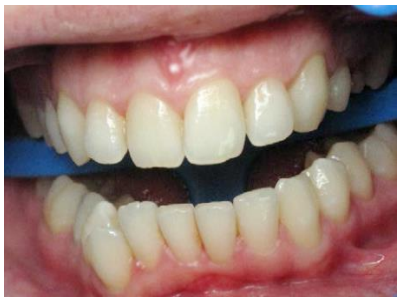

Figure 8. *Clinical picture after periodontal therapy*

The clinical periodontal parameters (BOP, PPD, CAL) were shown a reduction in their mean values after 3 months from the treatment with the PRP, with a highly significant difference no complications had been observed.

The mean value BOP before treatment was 2.6±0.32, after 1month treatment the mean BOP 1.8±0.2, after 3 months treatment the mean BOP 1.4±0.15.

The mean value PPD before treatment was 5.41±0.77 mm, 1 month after therapy it was 4,27±0.38 mm and 3 months after therapy it was 2.46±0.42 mm.

The mean value CAL before treatment was 5.84±0.79 mm, 1 month after therapy it was was 4.92±0.71 mm. and 3 months after therapy it was 3,4±0,7 mm table 1.

Table 1. *Clinical index baseline and after periodontal treatment*

Clinical index	Clinical index BOP, PPD, CAL baseline clinical results and after periodontal treatment		
	Before treatment	After 1month treatment	After 3-month treatment
mean BOP	2.6 ± 0.32	1.8 ± 0.2	1.4 ± 0.15
mean PPD	5.41 ± 0.77 mm	4,27 ± 0.38 mm	2.46 ± 0.42
mean CAL	5.84 ± 0.79 mm	4.92 ± 0.71 mm	3,4 ± 0,7 mm.

Discussion

The clinical manifestations of periodontitis include the periodontal pocket, an ideal site for bacterial colonization. Pathogenic bacteria living in complex biofilms cause and perpetuate this disease in susceptible hosts.[57,58]

In some cases, broad-spectrum antibiotic therapy has been the treatment of choice to control bacterial infection. However, increasing resistance of periodontal pathogens to antibiotics has become a major problem in the treatment of periodontal disease. With a better understanding of the pathogenesis of periodontal disease, which includes the host immune response, and the importance of the human microbiome.

It is very important that the treatment is carried out according to the plan, comprehensively and in stages - this will allow you to achieve results in a shorter time.

This shift in therapeutic targets and the issue of drug resistance call for alternative approaches that offer promising potential for the treatment and prevention of periodontal disease.

Modern dentistry offers both traditional and new therapeutic methods for the treatment of oral diseases.

Plasma therapy is a fairly well-known method, it is an injection method of introducing platelet-rich plasma obtained from the patient's blood. Plasma therapy is widely used in such areas of medicine as dermatology, cosmetology, gynecology, urology, neurology, orthopedics and traumatology, trichology and, of course, dentistry. This unique procedure is based on PRF technology.

This technique is successfully used in the treatment of atrophic, inflammatory diseases of the oral cavity, as well as to optimize and accelerate the regeneration of bone tissue during implantation and osteoplastic surgery.

The task of plasma therapy is to achieve not just the removal of the inflammatory process of the periodontium, but to start the process of natural restoration of the color, shape and structure of the gums, and prevent bone loss. Plasma therapy is carried out in the form of injections of plasma obtained from the patient's blood - autoplasma, into the problem area. Plasma is injected locally into damaged gum tissue,

The platelet plasma introduced into the tissues, due to the growth factors contained in it, causes the germination of capillaries, normalizes hemodynamics, tissue respiration, and metabolism.

The components contained in the plasma are absolutely natural for humans, they are not mutagens and cannot cause oncology, tumors and other negative reactions. As the concentration of fibrinogen in plasma is less, the stability and quality of fibrin glue were low.[59]

Hence, the use of autologous platelet concentrates opens a promising treatment option in the field of periodontal regeneration, especially in clinical situations demanding rapid healing.[39]

Growth factors are natural polypeptides that have a wide biological local effect on many cells, by influencing the main links of the regenerative process:

chemotaxis, cell proliferation, cell migration, differentiation.

The plasma therapy technique can be used in combination with various therapeutic methods and drugs, including antibacterial anti-inflammatory, immunomodulatory.

The most significant modification, which has been used over the years but has had the greatest impact, has been injectable platelet-rich fibrin (I-PRF), which has more specific properties.

Fibronectin, an extracellular glycoprotein, is the main component of platelet-rich fibrin for injection. Fibronectin has a large molecular weight. In addition, the application of fibronectin to the root surface promotes cell growth. Cellular growth extends from the supracrestal components to the periodontal ligaments. Last but not least, I-PRF offers higher biological qualities than PRP.

In addition, the results of this I-PRF proved to be useful. Solid platelet-rich fibrin (PRF), which is a prominent feature and has low centrifugation speed and duration, is the main advantage of I-PRF. I-PRF is mostly found in liquid form as PRF. This contributes to the acceleration of increased vascularization and helps to speed up wound healing. The concentration of autologous blood, known as I-PRF, has been known for many years. In most cases, in plastic and orthopedic operations, injectable platelet aggregates are used. It also reduces adverse reactions to transplanted material compared to other grafting methods. In addition, it makes many other surgeries, such as regenerative ones, much better options. In cases where this has been seen, I-PRF is useful and critical in periodontology for bone regeneration and wound healing. Therefore, it is not difficult to predict that this fully autologous blood concentrate, which is currently used in many areas and requires little invasiveness, will be used even more frequently in the future. This review paper contains the differences between platelet rich plasma (PRP) and PRF, the development of different platelets, and the use of I-PRF in periodontal therapy.

Chenchev et al. (2017) demonstrated through successful radiographic and clinical outcomes that combining advanced platelet-rich fibrin (A-PRF) with injectable platelet-rich fibrin (I-PRF) is beneficial for bone argumentation of the alveolar ridge prior to or during implant placement.[60]

According to Wang et al. (2018), in control tissue culture, PRP promotes osteoblast migration by a factor of two, whereas i-PRF displays a factor of three, indicating that i-PRF exhibits stronger osteoblast differentiation and proliferation.[61]

In accordance with Varela et al. (2018), I-PRF, which contains platelets, leukocytes, type 1 collagen, osteocalcin, and growth factors, is an excellent or extremely helpful option for the healing of soft and mineralized tissue.[62]

According to Gode et al. 2019, I-PRF improved the postoperative survival rate of diced cartilage.[63]

According to Izol et al. I-PRF has a favorable impact on root coverage in free gingival graft surgery.[64]

Ozsagir et al. 2020 found that for people with thin phenotypic, combining injectable platelet-rich fibrin with micro-needling had the greatest potential to increase gingival thickness.

This article evaluated the clinical efficacy injectable platelet-rich fibrin (I-PRF) the treatment of mild and moderate periodontitis. The results showed the effectiveness of this method.

For the treatment of periodontitis 4-6 sessions of plasma therapy were performed depending on the severity of the process). Break between sessions 7-10 days. Plasma therapy was carried out necessarily as part of the complex treatment of periodontitis and in combination with prof. oral hygiene, careful individual care of the patient's oral cavity. If necessary, the use of drugs can be added to the treatment regimen, both topically (antiseptic rinses, therapeutic toothpastes, applications of special gels, etc.), and inside (antimicrobials, vitamins, immunomodulators and etc.). The number of plasma-based sessions is strictly individual and depends on the severity of the inflammatory process.

After a course of plasma therapy, patients noted elimination of pain, bleeding and swelling of the gums, tooth mobility became less bad breath disappeared, loss of bone tissue stopped. There is also an improvement in local immunity. The first changes in t are noticeable on the 7th-10th day.

Effect of the procedure

- Elimination of bleeding;
- Decreased mobility;
- Relief of pain;
- Elimination of bad breath;
- Stopping the progression of periodontal disease;
- Acquisition of physiological coloration and anatomical form by the gums;
- General improvement in the patient's quality of life.

However, the effectiveness of I-PRF on its own is difficult to evaluate, as most studies have been done testing I-PRF in combination with transplant materials to improve regenerative surgery outcomes.

I-PRF therapy is an innovative technique that is a breakthrough in the clinical practice of doctors. The safety and effectiveness of its use are justified by numerous studies and wide application in the field of medical services.

Conclusion

This study confirmed that iPRF periodontal therapy can be successfully used in patients diagnosed with I-II periodontitis who have received individualization supportive periodontal therapy and regular periodontal maintenance. The use of iPRF in periodontal therapy represents a valuable minimally invasive adjunct to complex conservative therapy.

Declarations

Conflicts of interest and financial disclosures

The author declares that he has no conflict percent and there was no external source of funding for present research.

Source of funding

The work was not funded.

Ethical approval

The study was approved by the University ethics committee and was conducted in accordance with the Declaration of the World Medical Association.Informed consent Patients were informed verbally and in writing about the study and gave written informed consent.

Informed consent

Informed consent was obtained from all individual participants inclincluded in the study.

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ՆԵՐԱՐԿՎՈՂ ԹՐՈՄԲՈՑԻՏՆԵՐՈՎ ՀԱՐՈՒՑՔ ՖԻԲՐԻՆԻ (I PRF) ԿԼԻՆԻԿԱԿԱՆ ԿԻՐԱՌՈՒԹՅՈՒՆՆԵՐԸ ՊԱՐՕԴՈՆՏԻՏԻ ԱԴՅՈՒՎԱՆՏԱՅԻՆ ԹԵՐԱՊԻԱՅՈՒՄ. ԴԵՊՔԵՐԻ ՇԱՐՔ

Վալերի Տատինցյան,[1] Լյուդմիլա Տատինցյան,[2] Մինաս Պողոսյան,[2] Արմեն Շահինյան,[3] Հովհաննես Գևորգյան,[3] Բիայնա Հովեյան,[3] Տաթևիկ Մարգարյան,[3] Նվարդ Վանյան[4]

[1] Երևանի Մ. Հերացու անվան պետական բժշկական համալսարանի թերապևտիկ ստոմատոլոգիայի ամբիոնի պրոֆեսոր, Երևան, Հայաստան
[2] Երևանի Մ. Հերացու անվան պետական բժշկական համալսարանի թերապևտիկ ստոմատոլոգիայի ամբիոնի դոցենտ, Երևան, Հայաստան
[3] Երևանի Մ. Հերացու անվան պետական բժշկական համալսարանի թերապևտիկ ստոմատոլոգիայի ամբիոնի դասախոս, Երևան, Հայաստան
[4] Երևանի Մ. Հերացու անվան պետական բժշկական համալսարանի Օրթոպեդիկ ստոմատոլոգիայի ամբիոնի դոցենտ, Երևան, Հայաստան

Ամփոփում

Այս հետազոտության նպատակն է գնահատել ոչ վիրաբուժական պարօդոնտալ թերապիայի կլինիկական արդյունքները՝ օգտագործելով ներարկային թրոմբոցիտներով հարուստ ֆիբրին (I-PRF):

Նյութեր եւ մեթոդներ. Սույն հետազոտության մեջ վերլուծվել են պարօդոնտիտի I-II փուլերով 82 հիվանդների (43 տղամարդ և 39 կին, 36-ից 63 տարեկան) բուժման արդյունքները 2018-ից 2023 թվականներին ընկած ժամանակահատվածում: Պարօդոնտիտի ախտորոշումը հաստատվել է՝ հաշվի առնելով ոսկրային կորստի ռադիոլոգիական նշանները և արյունահոսության ցուցանիշները զոնդավորման ժամանակ (BOP), զոնդավորման խորությունը (PD), կլինիկական կցման մակարդակը (CAL): Կլինիկական պարամետրերը գրանցվել են հետազոտության սկզբում (նախքան և բուժումը), 1 ամիս հետո (iPRF թերապիայից հետո), 3 ամսվա վերջում (iPRF թերապիայից հետո): Բոլոր հիվանդները ենթարկվել են պարօդոնտալ բուժմանը, ինչպիսիք են մոտիվացիան, հրահանգը: Համալիր պարոդոնտալ բուժումը ներառում էր վերլնդային և ենթլնդային արմատների հեռացում ուլտրաձայնային սարքի միջոցով, հակաբակտերիալ թերապիա: 4 շաբաթ անց միայն այն հիվանդներն են անցել I-PRF թերապիա, որոնք պահպանել են բերանի խոռոչի օպտիմալ հիգիենան: I PRF ներարկվել է լնդերի տարածքում: Պլազմայի վրա հիմնված սեանսների քանակը խիստ անհատական է և կախված է բորբոքային գործընթացի ծանրությունից (4-6 սեանս ընդմիջում սեանսների միջև 1 շաբաթ):

Արդյունքներ. Բոլոր հիվանդների մոտ հետվիրահատական շրջաններն անցել են առանց բարդությունների, լուրջ ներվիրահատական կամ անմիջական հետվիրահատական բարդություններ չեն եղել: I-PRF թերապիայի կուրսից հետո հիվանդները նկատեցին ցավի վերացում, արյունահոսություն և լնդերի այտուցվածություն, ատամների շարժունակությունը նվազեց, անհետացավ բերանի տհաճ հոտը, դադարեց ոսկրային հյուսվածքի կորուստը: Լնդերի առաջին փոփոխությունները նկատելի են 7-10-րդ օրը: Կլինիկական պատկերը և ախտորոշիչ պարամետրերը համեմատելի էին սկզբնական փուլում և բուժումից հետո: Կլինիկական պարոդոնտալ պարամետրերը (BOP, PPD, CAL) ցույց են տվել դրանց միջին արժեքների կրճատում PRP-ով բուժումից 3 ամիս հետո, ընդ որում, խիստ նշանակալի տարբերությամբ, ոչ մի բարդություն չի նկատվել:

BOP-ի միջին արժեքը մինչև բուժումը 2,6 ± 0,32 էր, 1 ամիս բուժումից հետո միջին BOP 1,8 ± 0,2, 3 ամիս բուժումից հետո միջին BOP 1,4 ± 0,15:

PPD-ի միջին արժեքը մինչև բուժումը եղել է 5,41 ± 0,77 մմ, թերապիայից 1 ամիս հետո՝ 4,27 ± 0,38 մմ, իսկ թերապիայից 3 ամիս հետո՝ 2,46 ± 0,42 մմ:

CAL-ի միջին արժեքը մինչև բուժումը 5,84 ± 0,79 մմ էր, թերապիայից 1 ամիս հետո՝ 4,92 ± 0,71 մմ: իսկ թերապիայից 3 ամիս հետո այն եղել է 3,4 ± 0,7 մմ:

Եզրակացություն. Այս ուսումնասիրությունը հաստատեց, որ iPRF պարոդոնտալ թերապիան կարող է հաջողությամբ կիրառվել I-II պարոդոնտիտով ախտորոշված հիվանդների մոտ, ովքեր ստացել են անհատականացման աջակցող պարոդոնտալ թերապիա և կանոնավոր պարոդոնտալ սպասարկում: I-PRF-ի օգտագործումը պարոդոնտալ թերապիայի մեջ արժեքավոր նվազագույն ինվազիվ հավելում է համալիր պահպանողական թերապիայի համար:

КЛИНИЧЕСКОЕ ПРИМЕНЕНИЕ ИНЪЕКЦИОННОГО ОБОГАЩЕННОГО ТРОМБОЦИТАМИ ФИБРИНА (IPRF) В АДЪЮВАНТНОЙ ТЕРАПИИ ПАРОДОНТИТА: СЕРИЯ СЛУЧАЕВ

Валерий Татинцян,[1] Людмила Татинцян,[2] Минас Погосян,[2] Армен Шагинян,[3] Геворгян Оганес,[3] Биайна Овеян,[3] Татевик Маргарян,[3] Нвард Ванян[4]

[1] Профессор кафедры терапевтической стоматологии Ереванский государственный медицинский университет им. М. Гераци, Ереван, Армения

[2] Доцент кафедры терапевтической стоматологии Ереванский государственный медицинский университет им. М. Гераци, Ереван, Армения
[3] Преподаватель кафедры терапевтической стоматологии Ереванского государственного медицинского университета им. М. Гераци, Ереван, Армения
[4] Доцент кафедры ортопедической стоматологии, Ереванского государственного медицинского университета имени Гераци, Ереван, Армения

Абстракт

Целью данного исследования является оценка клинических результатов нехирургического пародонтологического лечения с использованием инъекционного обогащенного тромбоцитами фибрина (I PRF).

Материалы и методы: В настоящее исследование включены результаты лечения 82 (43 мужчин и 39 женщин, в возрасте от 36 до 63 лет) пациентов в период с 2018 по 2023 годы с пародонтитом I–II стадии. Регистрировали следующие клинические параметры в начале исследования (до лечения), через 1 мес (после iPRF -терапии), в конце 3-х мес (после iPRF -терапии). Все пациенты подвергались традиционному пародонтологическому лечению, такому как мотивация, инструктаж, а также наддесневое и поддесневое удаление зубного камня. Комплексное пародонтологическое лечение включало наддесневое и поддесневое скейлинг и санацию корня ультразвуковым аппаратом, антибактериальную терапию. Через 4 недели терапию I-PRF прошли только те пациенты, которые поддерживали оптимальную гигиену полости рта. I PRF вводили в область десны. Количество сеансов на основе плазмы строго индивидуально и зависит от выраженности воспалительного процесса (4-6 сеансов, перерыв между сеансами 1 неделя). Диагноз пародонтита устанавливали на основании рентгенологических признаков потери костной массы и показателей кровоточивости при зондировании (ВОР), глубине зондирования (ПД), уровне клинического прикрепления (УКЛ).

Результаты: Послеоперационные периоды у всех больных протекали без осложнений, серьезных интраоперационных и ближайших послеоперационных осложнений не было. После курса I-PRF терапии пациенты отмечали устранение болей, кровоточивости и отека десен, стала меньше подвижность зубов, исчез неприятный запах изо рта, прекратилась потеря костной ткани. Первые изменения в деснах заметны на 7-10-й день. Клиническая картина и диагностические параметры были сопоставимы в исходном состоянии и после лечения. Клинические параметры пародонта (BOP, PPD, CAL) показали снижение своих средних значений через 3 месяца после лечения PRP, при высокодостоверной разнице осложнений не наблюдалось.

Среднее значение ПБ до лечения составило 2,6 ± 0,32, через 1 мес лечения среднее ПБ 1,8 ± 0,2, через 3 мес лечения среднее ПБ 1,4 ± 0,15.

Среднее значение ППД до лечения составило 5,41 ± 0,77 мм, через 1 мес после терапии — 4,27 ± 0,38 мм и через 3 мес после терапии — 2,46 ± 0,42 мм.

Среднее значение CAL до лечения составило 5,84 ± 0,79 мм, через 1 месяц после терапии — 4,92 ± 0,71 мм. и через 3 мес после терапии - 3,4 ± 0,7 мм.

Заключение: Это исследование подтвердило, что пародонтальная терапия I PRF может быть успешно использована у пациентов с диагнозом пародонтит I-II,которые получали индивидуализированную поддерживающую пародонтальную терапию и регулярное пародонтологическое обслуживание. Использование I PRF в пародонтальной терапии представляет собой ценное малоинвазивное дополнение к комплексной консервативной терапии.