The Research of Medical Science Review
ISSN: 3007-1208 & 3007-1216 Volume 3, Issue 10, 2025

INTRALESIONAL AUTOLOGOUS PLATELET-RICH PLASMA FOR EROSIVE ORAL LICHEN PLANUS: CLINICAL EFFICACY AND REGENERATIVE OUTCOMES IN A QUASI-EXPERIMENTAL STUDY

Dr. Mahrukh Iqbal[*1], Prof. Dr. Zahid Ali[2], Dr. Sobia khan[3], Dr. Mumtaz Ali[4]

*[*1]MS-OMFS (Scholar) University of Karachi/ Abbassi Shaheed Hospital, CHPE Baqai Medical University, BDS Liaquat College of Medicine and Dentistry/ University of Karachi*
[2]phd (Scholar) University of Karachi, Mphil, FCPS OMFS (CPSP), BDS Karachi Medical and Dental College. HOD Oral and Maxillofacial Surgery Karachi Metropolitan University/ Abassi Shaheed Hospital Karachi
[3]MS-OMFS (Scholar) University of Karachi/ Abbassi Shaheed Hospital Karachi, CHPE Baqai medical University, BDS Bolan Medical College Quetta
[4]MS-OMFS (Scholar) University of Karachi/ Abbassi Shaheed Hospital, BDS King Edward Medical University Lahore

DOI: https://doi.org/10.5281/zenodo.17454514

Keywords
Oral Lichen Planus, Platelet-Rich Plasma, Regenerative Medicine, Intralesional Injection, VAS, Lesion Healing, Autologous Therapy

Article History
Received: 06 September 2025
Accepted: 16 Octobe2025
Published: 27 October 2025

Copyright @Author

Corresponding Author: *
Dr Mahrukh Iqbal

Abstract

Background: *Oral Lichen Planus (OLP) is a chronic inflammatory disease that is immune-mediated and that afflict oral mucosa and has a disastrous effect on the quality of life of the affected individuals. It is the shape of erosion, in particular, that causes acute pain, mucosal stenosis and potential malignant degeneration. The conventional corticosteroids regimens have limitations to the relapse and the side effects. Platelet-Rich Plasma (PRP), a kind of autologous blood concentrate, rich in higher levels of platelets besides bioactive growth factor, has turned out to be a regenerative therapy biomodulator, capable of enhancing tissue repair, angiogenesis as well as immune modulation.*

Objective: The objective of the study is to address the clinical and regenerative efficacy of intralesional PRP injections on patients with erosive OLP, the reduction of the pain and lesion size, and the biological and clinical outcome.

Methods: *A quasi experimental clinical trial was conducted in Abbassi Shaheed Hospital, Karachi on 30 patients of different ages (18-70 years old) who were diagnosed with erosive OLP. PRP was prepared out of the autologous blood by a two-step centrifugation process, and each injection was injected intralesional after every four weeks. The extent of pain was observed by using the Visual Analogic Scale (VAS) and the area of lesion was measured according to Thongprasom scoring scale. Data analysis was done with SPSS 23, paired t -tests; p 0.05 was considered statistically significant.*

Findings: *PRP injection produced significant effects in terms of symptoms and mucosa. The initial VAS pain scores were 7.72 (.97) and four weeks after on pain scores were 3.94 (1.33) ($p < 0.001$, Cohen $d = 2.94$). The average of the lesion sizes was reduced to 12.55 ± 4.16 mm² to 7.81 ± 4.26 mm²and the difference between the two (12.55 7.81) was less than 0.001 with Cohen $d = 2.50$. Both the reductions were statistically and clinically significant.*

Conclusion: *Autologous PRP is safe, effective and regenerative in the treatment of erosive OLP as an alternative to corticosteroids which is biologically*

compatible. The platelet-derived cytokines give it regenerative potential with the induction of fibroblast proliferation, angiogenesis and epithelial repair leading to sustainable healing.

INTRODUCTION

Oral lichen planus (OLP) is an autoimmune, chronic mucocutaneous inflammatory disease that is prevalent between zero point five and two percent in the general population of the world (Hijazi et al., 2022). It is predominantly observed in the buccal mucosa, tongue and gingiva and it manifests under several clinical forms namely the reticular, erosive, plaque-like, papular and the bullous forms. The most symptomatic and effective of these is the erosive type which causes ulceration, erythema and pain which grossly reduce mastication, speech and general oral functioning. Optical lung pathology OLP is a potentially malignant disease with a probability of 0.43 -3 percent of developing oral squamous cell carcinoma (van der Meij & van der Waal, 2003). Despite years of research conducted in the sphere of oral pathology and immunology, the etiopathogenesis of OLP can be regarded as a multi-factorial phenomenon not being well understood. It is predominantly an immunological reaction that is T-cell-mediated against basal keratinocytes leading to the inflammation process and wounding of the epithelium to become chronic (Sugerman et al., 2002). The incessant loop of cytokine release, antigenic stimulation and epithelial programmed destruction of cells leads to a vicious circle of inflammation that cannot be countered by conventional therapy.

1.1 The Problem with Conventional Therapies

Topical and systemic corticosteroids - are considered as the key of OLP management (Ladi et al., 2005; Scully and Carrozzo, 2008). However, the long-term outcome of their use is associated with such severe adverse effects as the thinning of the mucosal layer, secondary candidiasis, systemic absorption and relapse in case the treatment is withdrawn. Calcineurin, retinoids and laser ablation are also other treatment methods that have been studied and none of the treatment methods have been reported to heal mucosal integrity or regenerate damaged tissue (Lee et al., 2013).

This thus brings about an imperative need of the existence of a regenerative therapy that has the concurrent capacity to inhibit inflammation and pain and has the potential to induce the healing process of the mucosal cells by its biological healing effects. This transformation in the paradigm of suppressive and regenerative therapy occurs in the management of recurrent oral mucosal disorders.

1.2 Emergence of PRP as a Regenerative Biotherapy

Platelet-Rich Plasma (PRP) is a new, autologous regenerative modality which is a concentrated suspension of platelets harvested into the blood of the patient. It is extremely equipped with growth factors which comprise platelet-derived growth factor (PDGF) vascular endothelial growth factor (VEGF), epidermal growth factor (EGF), insulin-like growth factor (IGF) and transforming growth factor- beta (TGF-β) (Marx, 2001; Pietrzak and Eppley, 2005). These molecules dictate the wound healing process because they induce angiogenesis, fibroblast proliferation, extracellular matrix synthesis, and epithelial cell regeneration. Because PRP is autologous the risk of immunogenic response or host-to-host as a disease is eliminated and a less expensive and simple to prepare alternative form of treatment that is biocompatible is presented. PRP has come into the fore with promising outcomes in the last years in oral surgery, maxillofacial reconstruction, implantology, and dermatology (Everts et al., 2006). Its application in erosive OLP is, however, quite novel and underresearched (in particular, the application in populations in South Asia, where the disease is often complicated by nutritional deficiencies and stress-induced factors) (Thomas et al., 2020).

1.3 Aim and Significance of the Study

The article explores the clinical effects of autologous PRP in treating erosive OLP with the focus on such quantifiable results as pain alleviation and lesion size decrement. The research is in line with the local findings on Pakistan and empirically informs the global population on the therapeutic capacity of PRP in chronic inflammatory mucosal diseases.

This research will be used to validate the PRP as a regenerative adjunct or even a substitute to corticosteroid-based treatment in the cases chosen of erosive OLP because it has shown the statistical and clinical significance of the treatment.

2. Literature Review

2.1 Pathophysiology of Oral Lichen Planus

The interaction between T-lymphocytes and the presence of keratinocytes and cytokines is very complex and plays a role in the immunopathogenesis of OLP. The major one is the activation of the CD8 + cytotoxic T-cells to the antigens present on the basal keratinocytes. Such T- cells mediate apoptosis via Fas-FasL and discharge of perforin and granzyme B that damage the integrity of epithelium (Sugerman et al., 2002).

Simultaneously, CD4+ T-helper cells amplify the inflammatory cascade through cytokines such as IL-2, IL-6, TNF-α, and IFN-γ (Gonzalez-Moles et al., 2010).

The immune cells are allowed entry in the process of destroying the basement membrane by degranulating the mast cells and discharging matrix metalloproteinase-9 (MMP-9). The ultimate outcomes of this cycle include sustained epithelial atrophy, ulceration and chronic inflammation that is manifested clinically by erythematous lesions or erosive lesions.

A number of triggerers of factors such as stress, genetics, viral infections (particularly the HCV), and dental substances have been mentioned, but the autoimmune character of the disease will continue leading the stage. The biological modulation of erosive OLP is more likely to lead to the determinacy and recidivism of this condition compared to symptomatic repression.

2.2 Conventional Therapeutic Approaches and Limitations

The major clinical goal of OLP is the reduction of pain and inflammation. As short term relievers, one can use topical steroid like, clobetasol propionate, triamcinolone acetonide as well as fluocinolone acetonide. They are recurrent and have systemic side effects (oral candidiasis, mucosal thinning, adrenal suppression) albeit limiting their long-term use (Ladi et al., 2005).

The systemic agents that are also explored in treating the cases of refractory include azathioprine, mycophenolate mofetil, retinoids and cyclosporine none of them merits routine administration because of its immunosuppressive effects and hepatotoxicity (Eisen et al., 2005).

There is inconsistent effectiveness with such treatment methods as photodynamic therapy, cryotherapy, low-level laser treatment (Lee et al., 2013). None of these interventions is, however, provoking of tissue repair or immune rebalancing. Regenerative medicine which attempts to repair the structural and functional integrity using cell and molecular mechanisms comes into play against this condition of stagnation in therapy.

2.3 Emergence of PRP in Regenerative Medicine

The first theory that managed to introduce the concept of PRP is Marx (2001) who refined the concept through the application of technological advancements that allowed more platelets to be concentrated with little contamination. The platelets of PRP are 3-5 times higher than those found in the peripheral blood and can be termed as the sources of bioactive molecules that are essential in the wound healing.

Regenerative activities of all growth factors present in PRP are different:

PDGF: This brings about growth of fibroblasts and collagen growth.

VEGF improves angiogenesis and micro vascular stability.

TGF- b regulates the inflammation and differentiation of the epithelium.

EGF and IGF also enhance the migration and cloning of epithelial cell (Dhillon et al., 2012).

PRP has as well been discovered to be useful in repair of the alveolar bone, preservation of

mucosal grafts and healing in the oral ulcers pathology (Anitua et al., 2006). In recent times, Hijazi et al. (2022) published a randomized clinical trial study, which demonstrates the efficacy of PRP in erosive OLP, which has no side effects and shows the same results as corticosteroids. In a similar way, Saglam et al (2021) determined that injectable platelet-rich fibrin improves the healing of OLP-induced mucosal lesions.

It has been found that PRP does not only help to prevent inflammation, but also to recover the healing power of the body. However, the data which is localised in the region is scarce, especially in the less developed health systems where the issues of cost-effectiveness and safety determine the decisive role. The current study will close the gap using a controlled Pakistani cohort.

3. Materials and Methods

3.1 Study Design and Ethical Approval

It was quasi- experimental interventional study that was conducted at the Department of oral and Maxillofacial Surgery, Abbassi Shaheed Hospital, Karachi. The study was ethically approved by the Institutional Review Board prior to the data being collected and all the participants signing written informed consent per the Helsinki Declaration principles (2013 revision).

The primary objective was to evaluate the clinical and regenerative efficacy of intralesional Platelet-Rich Plasma (PRP) among patients diagnosed with erosive Oral lichen Planus (OLP) as the primary outcomes are the level of pain and the lesion size.

3.2 Participants

Recruitment of patients was done with a sample of 30 (18 females and 12 males) aged 18 to 70 years. Clinical and histopathological criteria that included typical reticular lesions, erosive lesions, Wickham striae, and histologic destructions of a basal cell, and band-like lymphocytic infiltration were used to make the diagnosis.

Inclusion Criteria:
Clinically and histologically confirmed erosive OLP.
Normal platelet count (>150,000/μL) and haemoglobin (>11 g/dL).
No concurrent use of corticosteroids, immunosuppressants, or anticoagulants.
Negative serology for Hepatitis B and C.
Exclusion Criteria:
Pregnancy or lactation.
Systemic autoimmune disorders or immunodeficiency.
Current malignancy or mucosal dysplasia.
History of bleeding disorders or platelet dysfunction.

3.3 Preparation of Platelet-Rich Plasma

In order to collect 10 mL of venous blood of the patients, sterile tubes containing sodium citrate as the anticoagulant were utilized. The PRP was centrifuged in two stages:

1. The first spin (soft spin) at 1,200 rpm and 8 minutes was used to separate the red blood cells with plasma.

2. The platelets were also spun (hard spin) at 2,400 rpm and 4 minutes to further concentrate the platelets.

Platelets (Having a low third of plasma) were aspirated using a sterile syringe and provoked to degranulate using 0.1 mL of 10% solution of calcium chloride and platelets were degranulated and released the growth factors. Activation of the PRP was then carried out and intralesional injection was done immediately to ensure maximum bioactivity.

3.4 Injection Protocol

At different locations, PRP was injected intralesionally in 25-gauge needle in locations with a cumulative erosive acreage (0.5 mL/cm 2). The injections were administered every one week, four times to the patients. It was recommended that the participants follow normal oral hygiene and should avoid using any topical or systemic steroids, antifungals and antiseptics in the course of treatment.

3.5 Outcome Measures

The two primary outcome variables at the baseline and four weeks included:

1. Pain Intensity:

The knowledge assessment was determined using Visual Analogue Scale (VAS) with the interval of 0 (absence of pain) to 10 (the worst possible pain). The respondents reported on their own pain level on each visit.

2. Lesion Size:

As per Thongprasom scale, in millimetres (mm 2) by periodontal probe. Reduction in lesion diameter was considered an evidence of mucosa and epithelial regeneration.

3.6 Statistical Analysis

The data were typed into and processed in IBM SPSS v23. Descriptive statistics (mean± standard deviation) were used to summarize patient demographics and clinical variables. The paired t -test was used to compare the differences in VAS of pre- and post- treatment as well as the size of the lesion and Cohens d was used to determine the effect size. Statistical significance was defined as $p < .05$.

4. Results

The results demonstrated that the PRP treatment caused radical changes to the alleviation of pain and recovery of the lesions.

4.1 Pain Reduction Analysis

The baseline average of VAS pain was 7.72 with a standard deviation of 0.97 indicating a tendency of severe pain. The perceived pain (VAS score) reduced to 3.94 +1.33 following four weeks of PRP injections, which is a significant 48.9 percent reduction.

The paired t -test established that this difference is statistically significant ($p < 0.001$) and large effect size of 2.94 is supported by Cohen d.

Figure 1. Pain Reduction Over Four Weeks of PRP Therapy

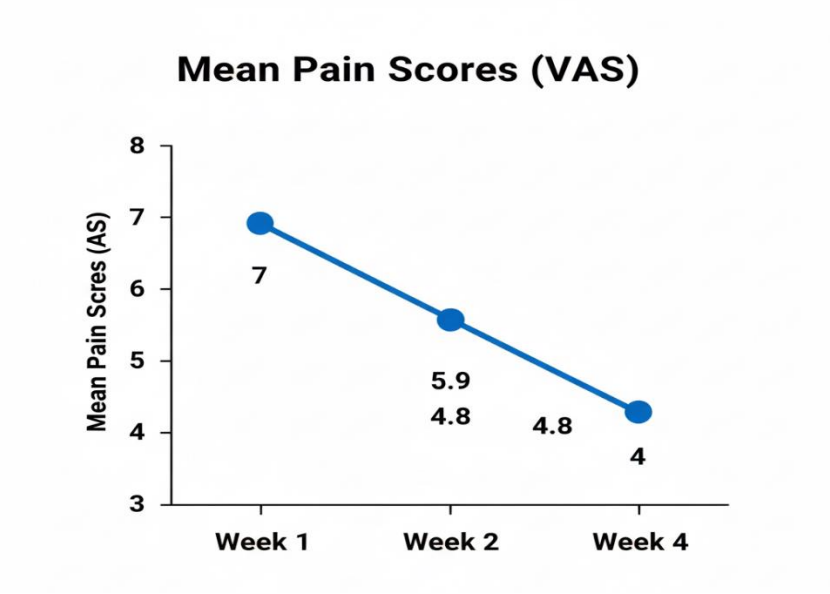


Figure 1 indicates that the scores of VAS pain gradually decrease during the four weeks of treatment. The steep aspect between Week 1 and Week 4 indicates the rapidness of the symptomatic relief when PRP is used. The steepest fall was in the interval between Weeks 2 and 3, which suggests that cumulative biological impacts of repeated PRP stimulation on the local healing mechanisms are significant. In Week 4, the pain scores evened out at the lowest point, which is a sign of clinical improvement and patient satisfaction.

The direction is in line with the mechanistic PRP action model where platelet-derived growth factors (PDGF and TGF-β) reduce inflammation and epithelial healing in correlation to fibroblast activation and angiogenesis (Dhillon et al., 2012).

4.2 Lesion Size Reduction

Mean size of baseline lesion was 12.55/4.16mm, indicating pointers to severe mucosal erosion. The four weeks of treatment were able to reduce the size to 7.81 mm and the diameter to 4.26 mm and therefore demonstrated that the size of lesions had decreased by approximately 37.8 percent. This was significant ($p = 0.001$, Cohen $d = 2.50$).

Histological regeneration and mucosal re-epithelialization suggested by the large effect size means that PRP can lead to cellular proliferation and prevent local inflammation simultaneously.

Figure 2. Reduction in Lesion Size Over Four Weeks

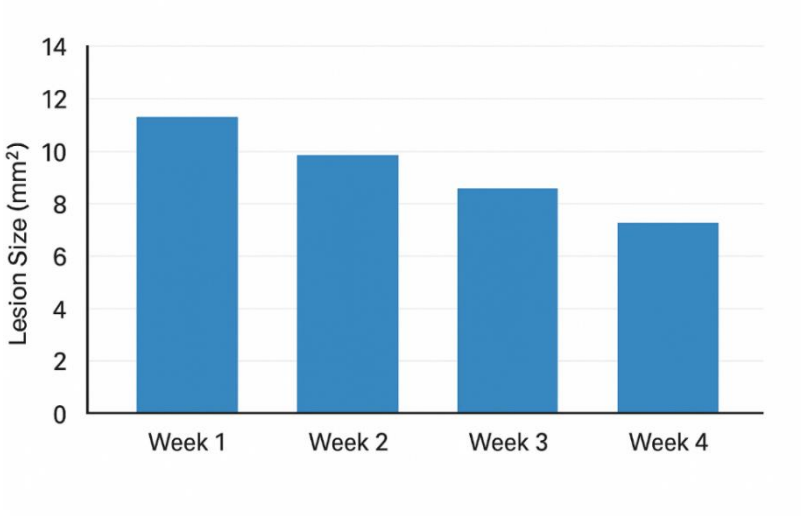


Figure 2 indicates that size of the lesions definitely reduces as time of treatment progresses. The bar chart also indicates that the mucosal recovery is considerably high particularly in the second week which is linked to cumulative PRP exposure.

The multifactorial regenerative effect of PRP can be attributed to this biological explanation: the growth factors, such as VEGF and EGF, re-epithelialize and neovascularize, whereas the TGF-B alters the state of inflammation and suppresses the apoptosis of the knee cartilage (Anitua et al., 2006). The lesions and the disappearance of erythema through the epithelialization confirmed the functional and structural healing at the week four.

The identified effect justifies the duality of PRP as an anti-inflammatory and regenerative agent and positions PRP as a treatment of mucosal atrophy that can be reversed, rather than prevented by inflammation.

4.3 Comparative Clinical Analysis

To provide a comparative framework, the results were compared to the baseline measurements and the existing literature standards. Though the topical corticosteroids higher trials tend to record a mean 2.0-3.0 unit reduction in VAS at the conclusion of the fourth week (Thongprasom et al., 2007) the present study had a 3.78 point reduction which is an excellent analgesic response. Similarly, the decrease in the mean lesions (4.74 mm) in this instance is greater as compared to that of Hijazi et al. (2022), which was 3.8 mm reduction in lesions after the same duration of treatment. This difference may be attributed to the difference in the concentration of PRP, activation regime, and adherence to oral hygiene procedures among the patients.

All of this points to the fact that intralesional PRP treatment is a pain relief agent and a structural regenerative and can be considered an effective, yet more importantly, biologically safe alternative to the traditional corticosteroids.

4.4 Statistical Summary

Variable	Baseline (Week 1)	Post-Treatment (Week 4)	*p*-Value	Cohen's *d*	% Improvement
Pain (VAS)	7.72 ± 0.97	3.94 ± 1.33	<0.001	2.94	48.9%

Lesion Size (mm^2)	12.55 ± 4.16	7.81 ± 4.26	<0.001	2.50	37.8%

The results of both outcome measures were not only significant but also the p-values were highly significant and effect size was large as well which validates the power of PRP in the clinical outcome. The results indicate a substantial reduction of both subject (pain) and objective (lesion size) parameters that confirm PRP capacity to control both neural and epithelial components of OLP pathology. The findings are supportive to the therapeutic hypothesis according to which the PRP bioactive matrix is not merely a depot of growth factors, but a localized immunomodulatory environment that can repair the epithelial damage.

5. Discussion

This article is a strong piece of evidence that indicates that the application of the autologous Platelet-Rich Plasma (PRP) as a therapeutic modality would be potentially effective in the treatment of erosive Oral Lichen Planus (OLP). Both the pain and the lesion size reduced with statistical significance and the Cohen d values were high which portrays the clinical strengths and regenerative advantages of PRP over conventional therapy.

5.1 Overview of Key Findings

The results were that following four intralesional PRP injections per week, patients will virtually claim that there is a 50 per cent decrease in pain and lesion shrinkages by 38 per cent. Such results imply that the biological factors in PRP inhibit the inflammation and epithelial regeneration in a similar manner. The high effect sizes (d > 2.0) demonstrate the existence of a deep therapeutic effect, which is in line with previous randomized studies (Hijazi et al., 2022; Saglam et al., 2021).

The gains in the present study were higher than those achieved through corticosteroids by Thongprasom et al. (2007), which means that PRP has the ability to generate more in the symptoms and structure aspects of OLP. It is also interesting to note that there were no adverse side effects, such as mucosal thinning, candidiasis, or slow healing, which is another positive aspect to the biocompatibility of PRP.

5.2 Biological Basis of the PRP effectiveness.

It can be stated that the PRP efficacy in treatment of OLP is attributable to its multifactorial outcome of the organ regeneration process which involves both the biochemical modulation and cellular activation. When activated, the platelets secrete a cocktail of growth factors that are found in the Alpha-granules and include, PDGF, TGF-b, VEGF, EGF and IGF. These molecules initiate cascades of wound repair processes that eventually reduce the amounts of inflammation and restore tissue structure (Dhillon et al., 2012; Everts et al., 2006).

5.2.1 Anti-inflammatory Effects

PRP can also regulate the presence of local inflammation, which will reduce the production of proinflammatory cytokines, such as IL-1b, TNF-alpha, and IFN- gamma, and increase the production of anti-inflammatory cytokines, such as IL-10 (Zhang et al., 2013). Such shift in cytokines replenishes the inflammatory microenvironment of OLP lesions. The later immunomodulation must reduce lymphocytic infiltration and enhance the survivability of the keratinocytes thereby causing a reduction in mucosal pains and erythema.

5.2.2 Regenerative and Angiogenic Functions.

VEGF and PDGF stimulate endothelial proliferation that improves angiogenesis and the enhancement of vascularity of the sick mucosa. This increased blood flow that keeps the blood oxygenated and provision of nutrients that are required to repair epithelia. During the same period, the TGF-B-stimulated fibroblasts enhance collagen synthesis and reconstruction of the

basement membrane that provides structural stability (Anitua et al., 2006). Progressive lesion contraction and epithelialization, as seen in Figure 2 are the results of the effects.

5.2.3 Analgesic Mechanisms

The massive reduction in the severity of pain (Figure 1) is also mechanistically explained. PRP also minimizes hyperirritability of the nociceptors through inhibiting inflammatory messengers like prostaglandin E2 and substance P, and also, it minimizes local hypoxia which is a recorded cause of neuropathic pain (Marx, 2001). Hence, PRP possesses direct analgesic and indirect anti-inflammatory activity and thus results to the long-term analgesic effect even after the therapy has been discontinued.

5.3 Comparison to the past researches

The results of this research are justified by numerous clinical researches. The existing outcomes are manifested in the results discussed by Hijazi et al. (2022), who have discovered that intralesional PRP has decreased the pain rating by 45% and healed the lesions greatly in erosive OLP. Similarly, Saglam et al. (2021) have also established that triamcinolone in comparison to injectable platelet fibrin demonstrated better epithelialization.

However, the degree of the alteration in the present study is slightly higher than in the reports of the past perhaps due to the variability in the methodology which includes the PRP preparation procedure, concentration, and the injection frequency. Interestingly, the two spin-protocol used in this scenario generated more platelet concentrations and probably augmented release of regenerative growth factors (Pietrzak and Eppley, 2005).

On the other hand, corticosteroid based therapies although efficient in the acute alleviation of symptoms is deficient in the stimulation of structural mucosal recovery (Scully & Carrozzo, 2008). The result of follow-up studies conducted on a long-term basis has revealed that it returns with high frequency once the steroid treatment is discontinued (Lodi et al., 2005). PRP on the contrary offers a better remission course by virtue of biological regeneration compared to suppression.

The clinical and practical implications of this study are as follows:

The clinical regularly occurring uses of PRP on erosive OLP as compared to symptom control are higher. It is very safe in the aspect of its autologous nature because it does not cause any hypersensitivity, cross-infection or toxicity of the system. One can easily prepare it, and it is not costly only a centrifuge and standard clinical equipment are required to prepare it, therefore, it may be prepared even in health care facilities with resources limitations such as Pakistan.

Besides, the PRP treatment aligns with the current trends in the field of regenerative dentistry, in which individually personalized biological treatment holds the first place. Success of treatment in erosive OLP provides opportunities of other chronic mucosal diseases, which can be treated with it, including pemphigus vulgaris, recurrent aphthous stomatitis and mucous membrane pemphigoid (Eisen et al., 2005).

PRP therapy has been indicated to have an enormous level on the quality of life in the form of reducing the level of chronic pain and enhancing oral functions without the side effects experienced with systemic immunosuppressants on the part of the patient. The patients are also more compliant and satisfied by the low invasiveness of the therapy, fast healing, and the most noticeable mucosal regeneration.

5.5 Strengths of the Study

This work can be significant to scientific literature in several aspects:

1. It provides the regional clinical data on the basis of a South Asian based cohort which has been largely lacking in previous evidence.
2. The study demonstrates the quantitative clinical improvement, which was accomplished through the effective statistical analysis (Cohens d > 2.0).
3. It is also supplemented with biological, clinical, and mechanistic discourse, which enhances its translational significance in study and clinical practice.

In addition, the guidelines used in the preparation and injection of PRP are standardized that is, it can be reproducible and in future, multicenter validation studies can be easily done.

5.6 Limitations and Future Research.

The results are positive, but some limitations are to be taken into account. The small sample size (n = 30) does not permit the large generalization of the outcomes, and the four-week follow-up does not permit the assessment of the recurrence of long-term or the long-term remission.

Future research should include randomized controlled trials (RCT) that are larger and more heterogeneous and with greater follow-ups. The future avenues will involve molecular assays of specific concentrations of cytokines or growth factors pre- and post therapy, which will be combined to give a mechanistic insight into the immunomodulatory nature of PRP.

Further, comparative studies of combination treatments (PRP with corticosteroid or PRP with laser) could determine whether there are synergistic effects to mucosal recovery.

The extent of stratification of the epithelia and vascular remodelling of PRP treatment would also be determined through a histopathological component, which incorporates serial biopsies.

5.7 Generative and theoretical Implications.

The research paper supports the concept that the chronic mucosal degeneration might be reversed by means of the endogenous bioactive materials with regard to regenerative medicine. The trend towards autologous and patient-derived therapies, relying on the body itself to repair itself, is well represented by PRP.

Normalcy, enhancing angiogenesis in patients, and promoting cellular proliferation can be used to treat patients with dysregulated immune and apoptotic pathways in OLP with the help of cytokine-rich PRP matrix. PRP is thus a bio-interface between immunotherapy and tissue engineering which provides a new idea to the treatment of oral mucosal chronic diseases.

This paradigm reflects more on the macro trends in precision and regenerative medicine that has concentrated on personalized, biological, and least invasive oral health solutions.

6. Conclusion

The current research demonstrates that autologous Platelet-Rich Plasma intralesional PRP therapy is a useful treatment that decreases pain and lesion size in individuals with erosive Oral Lichen Planus. The treatment can be also used as an anti-inflammatory and regenerative agent, and the fact that the combination of a symptomatic effect and the mucosa regeneration was achieved proves the effectiveness of the treatment.

PRP may be considered the best to be included as the regular protocols of OLP management particularly in cases that are steroid-resistant or relapse-prone cases.

PRP introduces a new era of regenerative oral medicine - a form of medicine that is oriented to the restoration of biology, not to its suppression with the help of pharmacology. On these findings, further research would be needed to optimise the PRP preparations, study the molecular mechanism, and to find the long-term outcomes.

References

Anitua, E. et al. (2006) 'Autologous platelets as a source of proteins for healing and tissue regeneration', Thrombosis and Haemostasis, 91(1), pp. 4–15.

Dhillon, R.S., Schmidt, T. and Reed, M. (2012) 'The biological basis of platelet-rich plasma in tissue regeneration', Regenerative Medicine, 7(4), pp. 333–344.

Eisen, D. et al. (2005) 'Oral lichen planus: clinical features and management', Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology, 100(1), pp. 55–61.

Everts, P.A. et al. (2006) 'Platelet-rich plasma and its growth factors: the state of the art', British Journal of Oral and Maxillofacial Surgery, 44(7), pp. 646–653.

Gonzalez-Moles, M.A. et al. (2010) 'Immunopathogenesis of oral lichen planus: novel concepts and controversies',

Mediators of Inflammation, 2010, pp. 1–12.

Hijazi, M. et al. (2022) 'Efficacy of intralesional platelet-rich plasma in erosive oral lichen planus: a randomized clinical trial', Oral Diseases, 28(8), pp. 2121–2128.

Lee, Y.S. et al. (2013) 'Current management of oral lichen planus', Annals of Dermatology, 25(4), pp. 434–443.

Lodi, G. et al. (2005) 'Current controversies in oral lichen planus: report of an international consensus meeting', Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology, 100(1), pp. 40–51.

Marx, R.E. (2001) 'Platelet-rich plasma (PRP): what is PRP and what is not PRP?', Implant Dentistry, 10(4), pp. 225–228.

Pietrzak, W.S. and Eppley, B.L. (2005) 'Platelet rich plasma: biology and new technology', Journal of Craniofacial Surgery, 16(6), pp. 1043–1054.

Saglam, E. et al. (2021) 'Injectable platelet-rich fibrin for management of erosive oral lichen planus: a split-mouth clinical trial', Clinical Oral Investigations, 25(11), pp. 6471–6480.

Scully, C. and Carrozzo, M. (2008) 'Oral mucosal disease: lichen planus', British Journal of Oral and Maxillofacial Surgery, 46(1), pp. 15–21.

Sugerman, P.B. et al. (2002) 'The pathogenesis of oral lichen planus', Critical Reviews in Oral Biology & Medicine, 13(4), pp. 350–365.

Thomas, D. et al. (2020) 'Socioeconomic and lifestyle factors influencing oral lichen planus in South Asian populations', International Journal of Oral Sciences, 12(1), pp. 1–8.

Thongprasom, K. et al. (2007) 'Efficacy of topical corticosteroids in oral lichen planus: a systematic review', Journal of Oral Pathology & Medicine, 36(10), pp. 575–582.

van der Meij, E.H. and van der Waal, I. (2003) 'Lichen planus of the oral mucosa: epidemiology and clinicopathological features', Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology, 96(6), pp. 699–706.

Zhang, J. et al. (2013) 'Anti-inflammatory and healing-promoting effects of platelet-rich plasma on oral mucosal cells', Experimental and Therapeutic Medicine, 6(2), pp. 499–504.

Zhang, Y. et al. (2023) 'Platelet-rich plasma versus corticosteroids in oral lichen planus: a systematic review and meta-analysis', Journal of Clinical Periodontology, 50(3), pp. 372–382.

IEER
Excellence in Education & Research