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PLATELET-RICH PLASMA IN DERMAL REMODELING: A PROSPECTIVE REAL-WORLD CASE SERIES INTEGRATING CLINICAL AND PATIENT-REPORTED OUTCOMES

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ABSTRACT

Background: Platelet-rich plasma (PRP) is a modality recognized in the field of dermatology for its regenerative properties. However, there is significant clinical variety, particularly on patient-reported outcomes and real-world effectiveness across indications.
Objective: The aim of this prospective observational case series was to evaluate the efficacy of PRP therapy in real-life clinical setting based on clinician-assessed and patient-reported outcomes.
Methods: Fifty patients received autologous PRP treatment between January and June 2019. PRP was prepared using a standardized centrifugation process and applied as intradermal injections at 3-4 weeks intervals. Clinical indications included striae distensae, post-traumatic and burn scars, and skin quality concerns. Standardized clinical photography, retrospective observer-based Patient and Observer Scar Assessment Scale (POSAS) scoring, and a structured patient-reported outcome (PRO) instrument assessing perceived efficacy and satisfaction were used to evaluate outcomes. Descriptive analysis was performed, including summary statistics of PRO and POSAS score changes in representative cases.
Results: The results of PRP treatment were variable, but mostly positive. The most consistent results were improvements in skin texture, skin firmness and overall appearance. Early-stage dermal injury (e.g., striae distensae) showed greater relative improvement compared with mature scars. POSAS scores decreased in representative cases, and the majority of the patients reported high satisfaction and willingness to undergo repeat treatment. No major adverse events were observed. Overall, 90% of patients expressed willingness to undergo repeat treatment, reflecting high satisfaction.
Conclusions: PRP therapy demonstrated favorable outcomes in a real-life clinical setting, particularly in improving skin texture, firmness and overall skin appearance.

KEYWORDS

Platelet-Rich Plasma (PRP); Scar Remodeling; Dermatology; Skin Regeneration; Patient-Reported Outcomes; Case Series

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1. Introduction

The rising use of minimally invasive cosmetic procedures has led to the continuing interest in the use of therapies that enhance skin regeneration with minimal downtime. Platelet-rich plasma (PRP) is one such promising autologous regenerative modality due to its high platelet concentration and bioactive potential. PRP contains several growth factors, including platelet-derived growth factor (PDGF), transforming growth factor-β (TGF-β), and vascular endothelial growth factor (VEGF), which are involved in collagen synthesis, angiogenesis, fibroblast migration and extracellular matrix remodeling within the dermis [1-5].

In addition to its growth factor profile, emerging molecular evidence suggests that PRP may also exert anti-inflammatory, anti-apoptotic, and immunomodulatory effects, further supporting its use in tissue repair and regeneration [5]. Histopathological evidence indicates that PRP may improve the structural integrity of damaged skin by increasing the epidermal thickness, the density of the collagen and elastin fibers, and the formation of rete ridges [6,7]. These mechanisms are particularly relevant in dermatological disorders that involve dermal atrophy and connective tissue disruption, e.g., scars and striae distensae.

Striae distensae, commonly observed during pregnancy is a type of dermal scarring that occurs due to mechanical stretching and hormonal effects. They are often associated with a significant level of psychosocial burden and reduced quality of life despite being medically harmless. Although several treatment methods are available, no gold standard treatment exists and clinical outcomes are still inconsistent. Recent systematic reviews assessing interventions to treat striae distensae including PRP report generally favorable but heterogeneous results in terms of skin appearance and dermal remodeling, with overall quality of evidence

being limited [6,8,9]. Comparability across studies remains poor due to small sample sizes, methodological and outcome measure differences [9]. Consequently, there is no consensus regarding common evaluation measures and studies integrating both objective clinical evaluation and patient-reported outcomes in PRP-treated striae distensae remain limited.

Likewise, in the context of scar management, such as post-traumatic scars, burn scars, etc., PRP has been proposed as an adjunctive regenerative therapy aimed at improving the skin texture, its elasticity, and overall aesthetic appearance. A recent systematic review and meta-analysis indicate that there may be an increase in the quality of scar following PRP treatment; but substantial heterogeneity in the treatment approach and outcome measures limits inter-study comparability [10]. Related indications, such as atrophic acne scarring, also suggest that PRP may have a positive effect on clinical outcomes, especially when combined with other modalities, although variability in study design limits generalizability [11-13]. Although objective changes in skin structure are often noted, most studies do not sufficiently incorporate clinical evaluation with patient-reported outcomes. In recent dermatological studies, the significance of validated patient-reported outcome measures (PROMs) is becoming increasingly evident, especially in the aesthetic and regenerative dermatology, wherein psychosocial impact is central in the treatment evaluation process [14,15]. Patient perception of improvement therefore remains a critical yet underreported endpoint.

In this regard, well documented case series can provide valuable real-world clinical evidence, especially when it comes to incorporating standardized photographic documentation and patient-reported outcomes. Such approaches allow evaluation under various clinical signs, such as post-partum striae distensae and traumatic or burn-related scars. To this end, the current study is an appraisal of clinical and patient-reported outcome following PRP therapy in a heterogeneous group using a real-world case series design and standard photographic assessment.

With the heterogeneity of PRP preparation techniques, treatment regimens, and clinical presentations, and with the lack of integration of standardized patient-reported outcomes in the literature, there is a need to obtain real-world data representing common clinical practice. To this end, the present study is therefore designated as an exploratory, descriptive case series intended to help characterize both clinician-assessed and patient-reported outcomes following PRP therapy across a variety of dermatologic indications. This work aims to provide practice-relevant information on variability of treatment responses, patient perception and procedural tolerability in a real-world environment rather than being a confirmatory efficacy study. PRP showed positive patient-reported outcomes and small clinical gains across heterogeneous indications in this exploratory real-world cohort study. However, variability in response, lack of standardized outcome measures and the observational design limit causal inference. PRP should therefore be considered an adjunctive modality, and its clinical role needs to be confirmed in controlled, indication-specific studies with standardized protocols and validated outcome measures. Beyond objective clinical outcomes, patient perception, satisfaction, and treatment acceptability represent critical dimensions of therapeutic success, particularly in aesthetic medicine, where psychosocial impact and subjective evaluation play a central role in care delivery.

2. Materials and Methods

2.1 PRP Biology and Preparation Principles

PRP is an autologous blood product obtained by centrifugation to separate the erythrocytes and plasma components and concentrate the platelets in a reduced plasma volume [16]. Variability in centrifugation parameters such as the speed, duration and spin cycles contribute to heterogeneity in platelet concentration and leukocyte content [16,17].

Final platelet concentrations are typically 2- to 9-fold above baseline, depending on the protocol used to prepare them [16]. Platelet activation can be exogenous (e.g., calcium chloride, thrombin) or endogenous following exposure to collagen [5]. Exogenous activation causes rapid growth factor release with endogenous activation potentially leading to a more sustained release profile relating to fibrin matrix formation [17].

2.2 Study Design and Setting

This was a prospective observational case series conducted at a single-center aesthetic clinic involving patients who underwent autologous PRP therapy in a routine clinical practice study. The main objective was to evaluate patient-reported outcomes, treatment compliance, and overall satisfaction. Written informed consent was obtained to have both treatment and photographic documentation.

2.3 Study Period and Patient Cohort

Data were gathered prospectively between January and mid-June 2019. Included were 50 consecutive patients. The cohort was predominantly female (84%, n=42) and male (16%, n=8). Age distribution included 18-25 years (10%), 26-35 years (54%), 36-45 years (18%), and over 46 years (18%) (Figure 1).

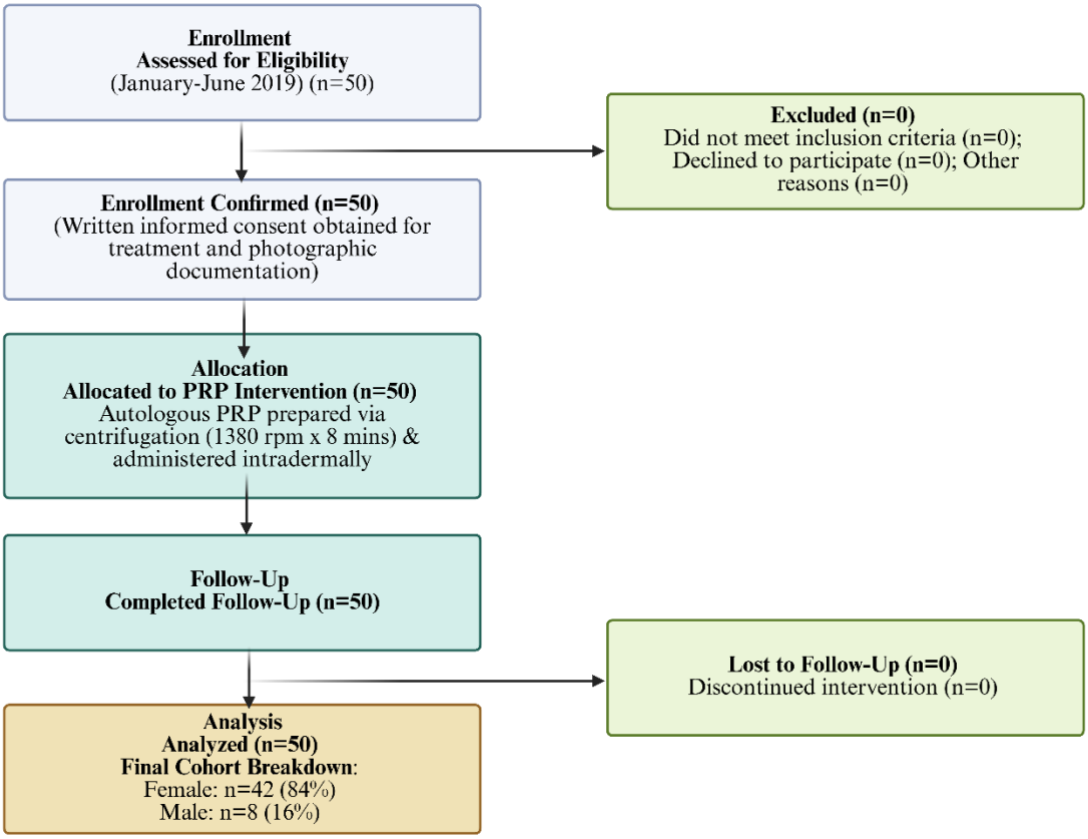

Fig. 1. *Flow diagram of patient inclusion, treatment allocation, and analysis in the prospective observational PRP cohort.*

2.4 Clinical Indications

PRP treatment was performed for a range of various dermatological and aesthetic indications. The most frequent were symptoms of aging and degradation of dermal quality (29%, n=15), and uneven skin tone, reduced skin density and decreased elasticity (29%, n=15). Other signs were the scar revision (18%, n=9), androgenetic or non-scarring alopecia (10%, n=5), and striae distensae (10%, n=5). More uncommon signs consisted of decreased skin hydration and hardness (3%, n=1), and of periorbital hyperpigmentation (1%, n=1) (Figure 2).

The sources of referrals were; physician recommendation (47%), self-referral (22%), peer recommendation (22%), and observation of improvement in others (9%).

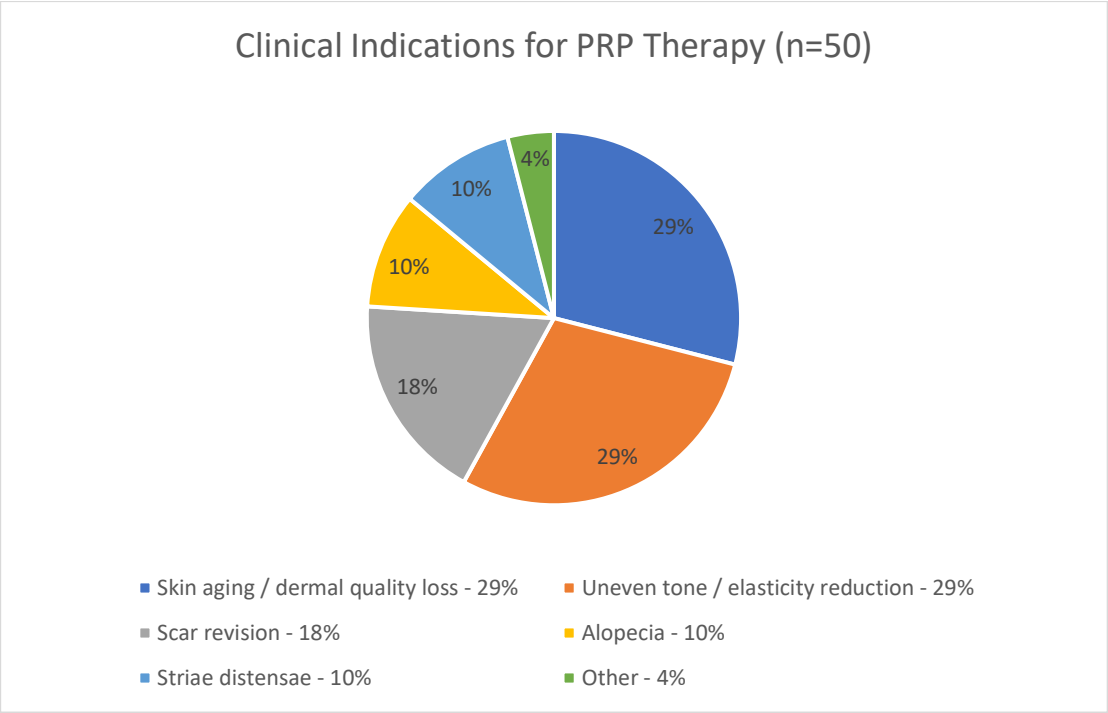

Fig. 2. *Distribution of clinical indications for PRP therapy in the study cohort.*

2.5 PRP Preparation and Injection Protocol

About 20 mL peripheral venous blood was collected into anticoagulant tubes and processed using a single-spin centrifugation protocol (1380 rpm, 8 minutes), yielding a platelet-enriched plasma fraction. The PRP fraction was isolated and placed into sterile syringes, and sodium bicarbonate (8.4%) added to buffer the PRP prior to administration.

Although direct platelet quantification was not performed, the preparation is consistent with the protocols that typically yield 2- to 5-fold platelet concentration increases. The product is most compatible with leukocyte-poor PRP (LP-PRP); however, due to the absence of direct platelet and leukocyte quantification, precise classification according to established PRP classification systems (e.g., Dohan Ehrenfest) is not possible. Before injection, no exogenous stimulation was conducted; platelet stimulation was assumed to be endogenous following intradermal point-by point (deposit) administration (Figure 3).

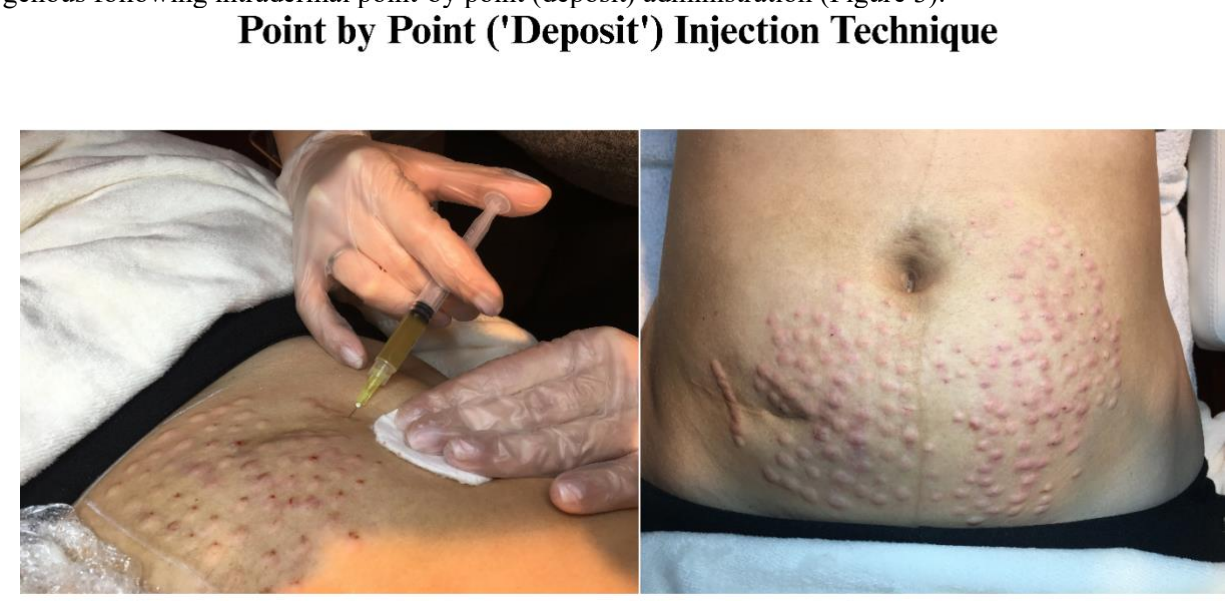

Fig. 3. *Intradermal injection technique demonstrating point-by-point administration in PRP.*

2.6 Treatment Schedule and Procedure Characteristics

Treatment frequency was individualized. Annual treatment cycles were reported by 40% of patients, biannual cycles by 26%, and more frequent sessions by 22%. Most patients (67%) completed one treatment series, 20% completed two, 9% three, and 2% more than four series.

Procedure duration ranged from 30 to 40 minutes in 44% of cases. Pain perception was reported as “rather not painful” (54%), “not painful” (24%), and “definitely painful” (2%).

2.7 Post-Procedure Course

Recovery time was minimal. One-day recovery was reported by 38% (n=19) of patients, while 31% (n=15) experienced resolution within a few hours. Mild symptoms lasting 2-3 days were reported by 28% (n=14) of patients.

Immediate post-procedure findings included puncture marks (80%), superficial plasma vesicles (11%), and mild ecchymosis (6%). Post-treatment care included wound-healing or regenerative preparations (32%), soothing topical agents (24%), combined formulations (18%) and no topical care (18%).

2.8 Outcome Measures

Clinical outcomes were assessed using a structured, non-validated patient-reported outcome (PRO) questionnaire developed for routine clinical use. As this instrument was not formally validated, findings derived from PRO data should be interpreted as exploratory and reflective of patient perception rather than standardized outcome measurement. The instrument evaluated perceived efficacy, tolerability, safety, and overall satisfaction.

Patient-reported efficacy was categorized into ordinal levels (“high,” “moderate,” “low”), with domain-specific improvements recorded (skin firmness, tone/density, wrinkle reduction, scar appearance).

Treatment tolerability was assessed using a categorical pain scale and self-reported downtime.

Safety evaluation included documentation of immediate and short-term post-procedural effects (e.g., puncture marks, ecchymosis, transient skin reactions), which were classified as expected procedural effects unless clinically significant.

Standardized clinical photographs were obtained under consistent conditions.

Due to the observational design and use of a PRO instrument, outcome assessment is subjective and may be influenced by patient expectations and concurrent treatments.

2.9 Patient Satisfaction and Follow-Up

Overall satisfaction was high, with 90% (n=45) of patients expressing willingness to undergo repeat PRP treatments. Observer POSAS scoring was performed retrospectively using standardized photographic documentation rather than in-person evaluation, which may introduce observer-related bias.

2.10 Cohort Heterogeneity and Analytical Approach

Given the diversity of clinical indications included in this cohort, outcomes were analyzed descriptively. No comparative statistical analyses between indication groups were performed due to sample size limitations and heterogeneity in baseline characteristics. Representative case-based analysis was used to illustrate treatment response across selected clinical categories.

2.11 Study Endpoints

The primary endpoint of this study was change in patient-reported perceived efficacy following PRP treatment. Secondary endpoints included changes in POSAS scores in representative cases, patient satisfaction (willingness to repeat treatment), and treatment tolerability (pain perception and downtime).

3. Results

3.1 Overview of Clinical Outcomes

In the cohort, PRP therapy was associated with variable changes in skin texture, skin quality, and general skin appearance. Reported improvements included skin firmness, surface regularity, and color homogeneity. No severe adverse events were observed. Three representative cases are provided to illustrate treatment response across different types of dermal injury, namely: striae distensae, post-traumatic scar, and burn scar. Across the cohort, the majority of patients reported moderate to high perceived improvement, particularly in domains of skin texture and firmness, although formal statistical comparisons were not performed.

3.2 Outcomes by Indication Group

Treatment response varied across indication groups. Patients treated for striae distensae and early-stage dermal changes more often reported a greater perceived improvement, especially in skin texture and homogeneity of skin color. By contrast, patients with mature scars (post-traumatic and burn-related) had smaller but more consistent results of surface regularity and tissue pliability.

In general, patient-reported outcomes indicated high satisfaction across groups but the magnitude of the improvement was also greater in conditions where there was earlier-stage dermal remodelling compared with long-term fibrotic tissue. These observations are descriptive and were not subjected to formal statistical analysis due to sample size and heterogeneity of cohorts.

3.3 Case 1. Striae Distensae (Postpartum)

A 27-year-old female presented with postpartum abdominal striae distensae (striae rubrae). The patient underwent three PRP sessions at four-week intervals.

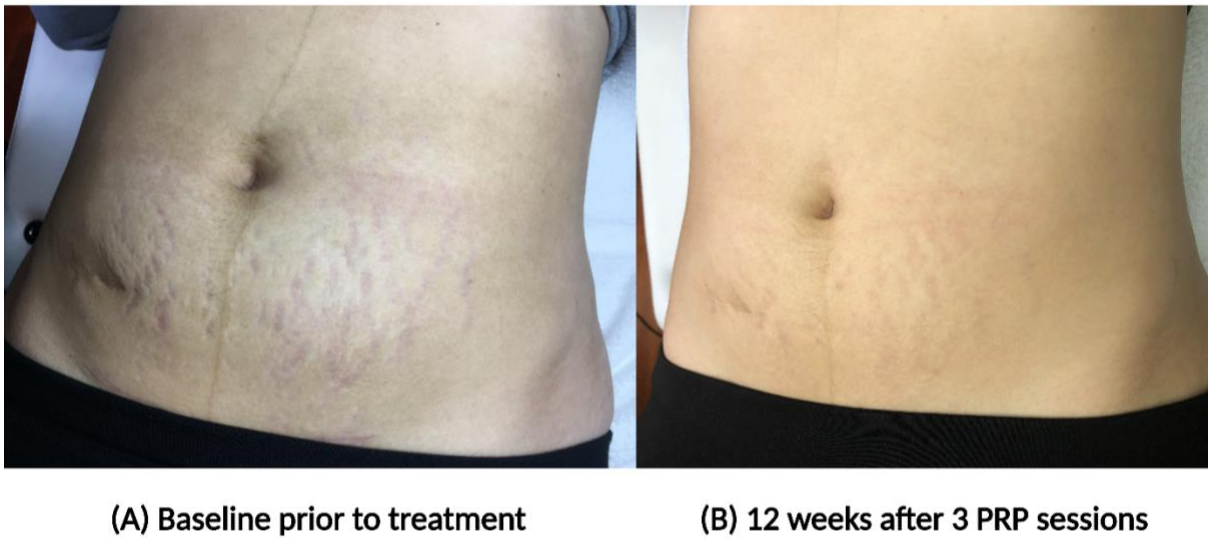

Fig. 4. *Postpartum abdominal striae distensae treated with PRP.*
(A) Baseline showing erythematous striae rubrae with dermal atrophy.
(B) 12 weeks after three PRP sessions demonstrating reduced erythema and improved skin texture.

Baseline lesions were characterized by erythematous, atrophic linear bands with decreased dermal density (Figure 4A). At 12 weeks following treatment completion (Figure 4B), there was a reduction in erythema, apparent lesion depth, and an improvement in skin texture and firmness.

POSAS scores decreased in both observer and patient ratings:

Observer POSAS: 37 → 25

Patient POSAS: 34 → 22

The patient reported high satisfaction and a subjective improvement in the overall skin quality. No negative effects were noticed.

3.4 Case 2. Post-Traumatic Scar Following Trampoline Injury

An 18-year-old female with a fully developed ankle scar following severe injury underwent three rounds of PRP treatment every four weeks.

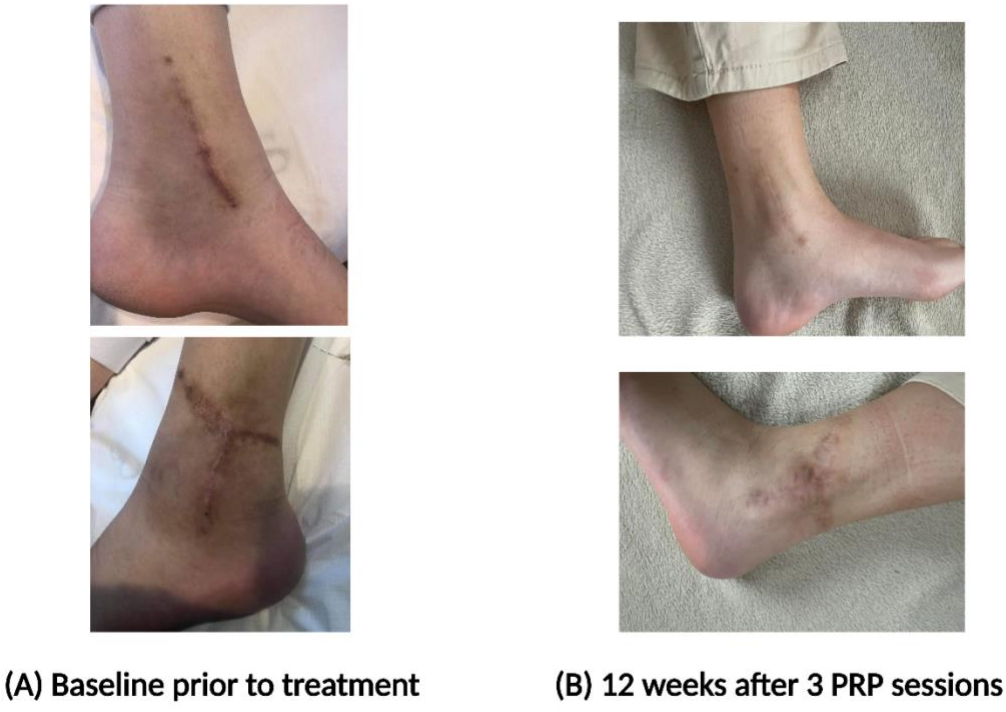

Fig. 5. *Post-traumatic ankle scar following surgical repair.*
(A) Baseline showing linear scar with surface irregularity and dyschromia.
(B) 8 weeks after PRP treatment demonstrating improved texture, pigmentation, and reduced contracture.

Baseline measurement (Figure 5A) showed that the linear scar was stable with the surface being irregular, dyschromic, and contracted. Clinical observations made at 12 weeks after treatment (Figure 5B) showed an improvement of surface regularity, partial normalization of pigmentation, an increase in tissue pliability, and a decrease in contracture on palpation.

The POSAS scores improved as follows:

Observer POSAS: 35 → 26

Patient POSAS: 32 → 24

The patient reported improvement in her scar appearance and texture. There were no negative events.

3.5 Case 3. Burn Scar Remodeling

A 29-year-old woman with mature post-burn scar on the lower leg was treated with three rounds of PRP treatment.

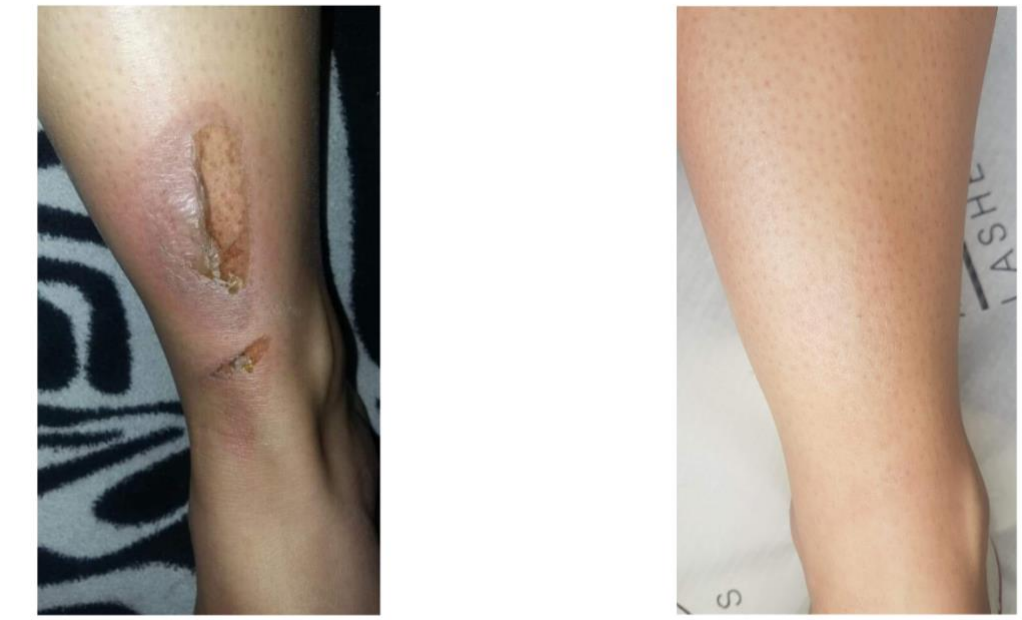

Fig. 6. *Post-burn scar of the lower leg treated with PRP.*
(A) Baseline demonstrating atrophic scar with irregular surface and contour depression.
(B) Post-treatment image showing improved uniformity and skin integration.

At baseline (Figure 6A), the scar has a heterogeneous texture, mild atrophy, and contour depression. Clinical assessment after treatment (Figure 6B) showed an increase in the uniformity of scar, a decrease in the surface irregularity, improved integration with surrounding skin, and partial recovery of the contour depression.

The scores of both patient and observer assessments on POSAS improved:

Observer POSAS: 42 → 30

Patient POSAS: 38 → 27

The patient expressed that she was happy with the aesthetic result. No complications were observed.

3.6 Summary of Case-Based Outcomes

In all three representative cases, there was an observable change in the skin texture, surface regularity, dermal firmness, pigmentation, and scar appearance after PRP treatment.

In all cases, there was a decrease in POSAS scores (Table 1) which are indicative of improvements in both observer- and patient-reported domains. The magnitude of improvement varied between cases and was greater in striae distensae than in mature scar lesions.

Table 1. POSAS Scores Before and After PRP Treatment in Representative Cases

Condition	Case	Observer POSAS (Pre)	Observer POSAS (Post)	% Improvement	Patient POSAS (Pre)	Patient POSAS (Post)	% Improvement
Striae distensae	Case 1	37	25	32%	34	22	35%
Post-traumatic scar	Case 2	35	26	26%	32	24	25%
Burn scar	Case 3	42	30	29%	38	27	29%

Table 1. Patient and Observer Scar Assessment Scale (POSAS) scores before and after PRP treatment in representative cases.

Observer scores were derived retrospectively from standardized clinical photographs. Patient scores reflect subjective assessment of scar characteristics, including color, thickness, stiffness, and irregularity. Percentage change was calculated based on total score reduction. In representative cases, POSAS scores demonstrated relative reductions ranging from 25% to 35% following treatment.

4. Discussion

The present study evaluated clinical outcomes and patient-reported outcomes after platelet-rich plasma (PRP) therapy in a real-world cohort, including case-based analysis of striae distensae and scar remodeling. In the given cases, improvements in skin texture, dermal quality, and overall appearance were observed, with high patient-reported satisfaction and a favorable safety profile. These findings are consistent with existing literature that indicates the possible use of PRP as a regenerative dermatologic agent. The biologic rationale of PRP is based on the release of various growth factors by activated platelets, including platelet-derived growth factor (PDGF), transforming growth factor-B (TGF-B), vascular endothelial growth factor (VEGF), fibroblast growth factor (FGF), epidermal growth factor (EGF), and insulin-like growth factor-1 (IGF-1). These mediators facilitate fibroblast growth, angiogenesis, extracellular matrix reorganization, and re-epithelialization, processes that play crucial roles in dermal repair in conditions such as scars and striae distensae [5,18,19].

These findings should be interpreted in the context of heterogeneous evidence regarding PRP in dermatology. Although biological plausibility has been well established, clinical outcomes have been inconsistent across the studies. The variability that has been observed with this cohort particularly between early-stage and mature lesions, is consistent with the results of recent systematic reviews, which suggest treatment response depends on the tissue characteristics of the baseline, the chronic nature of the lesions, and differences in methods of PRP preparation and delivery.

Clinically, PRP appears to function primarily as an adjunctive than a definitive standalone therapy. The patient satisfaction rates among the participants of this cohort are high, highlighting the importance of subjective treatment perception in aesthetic dermatology. These findings support the integration of PRP into personalized treatment plans, when patient expectations, minimum downtime and tolerability are the main factors to consider.

In this cohort, clinical benefits were observed in both early-stage striae and mature scar tissue. Improvements in erythema and better skin texture in striae rubrae may represent continuing dermal remodeling of the skin in earlier stages of the disease. In scar cases, improved surface regularity, enhanced tissue pliability and better integration with adjoining skin, suggests potential modulation of already established fibrotic tissue. However, the magnitude of response varied between patients, which may be due to differences in the chronicity of lesions, baseline severity, and tissue properties.

In the existing literature, the same improvements in dermal texture and aesthetic outcome are reported after PRP therapy in various indications, but the results are inconsistent. Systematic reviews indicate this heterogeneity and attribute it to little comparability between studies, due to the differences in PRP preparation methods, treatment protocols and outcome assessment tools.

One of the main issues in PRP studies is the absence of standardization in preparation methods and product classification. Variations in platelet concentration, leukocyte content and activation procedures could play a significant role in biological activity and clinical response. The Dohan Ehrenfest system offers a guideline to identify platelet-rich plasma and platelet-rich fibrin variants, but has not provided universal protocols in dermatologic applications. This variability has been an important obstacle to reproducibility and evidence synthesis.

In this study, the use of patient-reported outcomes is clinically relevant information, especially in aesthetic dermatology where subjective perception significantly contributes to the assessment of treatment. The perceived value of PRP in everyday practice is supported by high levels of satisfaction and readiness to repeat the procedures. Nonetheless, the application of non-validated instrument limits comparability and introduces possible measurement bias.

Several limitations should be taken into consideration. Causal inference is limited by the observational design, small sample size and absence of a control group. The outcome assessment that was used was based on patient-reported measurements, and retrospective photographic evaluation which can result in bias.

Additionally, outcomes may have been affected by heterogeneity in clinical indicators and adjunctive therapy use. The follow-up time was short and could not evaluate the effectiveness in the long-term.

Although there are limitations, PRP represents a biologically plausible and overall well-tolerated adjunctive treatment of dermal remodeling. To further establish its clinical role and optimize treatment parameters, future studies need to be standardized in preparation protocols, validated in outcome measures, and controlled in study designs. The lack of a standardized PRP characterization also hinders any reproducibility and comparability with previous literature.

5. Conclusions

PRP therapy was associated with positive PROs and small clinical improvements across heterogeneous dermatologic indications in a real-world setting. The major improvements were seen in early-stage dermal conditions and lesser but consistent effects were noted in mature scar tissue.

However, substantial heterogeneity in treatment response, lack of standardized PRP characterization and methodological constraints such as observational design measures preclude definitive conclusions regarding efficacy.

PRP should therefore be considered an adjunctive modality in regenerative dermatology. Future research should prioritize randomized controlled designs, standardized protocols of PRP preparation and validated outcome measures to define its clinical role and optimize treatment strategies.

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REFERENCES

1. Marx, R. E. (2001). Platelet-rich plasma (PRP): What is PRP and what is not PRP? *Implant Dentistry, 10*(4), 225–228. https://doi.org/10.1097/00008505-200110000-00002
2. Everts, P. A., Knape, J. T., Weibrich, G., Schönberger, J. P., Hoffmann, J., Overdevest, E. P., Box, H. A., & van Zundert, A. (2006). Platelet-rich plasma and platelet gel: A review. *The Journal of Extra-Corporeal Technology, 38*(2), 174–187.
3. Foster, T. E., Puskas, B. L., Mandelbaum, B. R., Gerhardt, M. B., & Rodeo, S. A. (2009). Platelet-rich plasma: From basic science to clinical applications. *The American Journal of Sports Medicine, 37*(11), 2259–2272. https://doi.org/10.1177/0363546509349921
4. Pixley, J. N., Cook, M. K., Singh, R., Larrondo, J., & McMichael, A. J. (2023). A comprehensive review of platelet-rich plasma for the treatment of dermatologic disorders. *The Journal of Dermatological Treatment, 34*(1), 2142035. https://doi.org/10.1080/09546634.2022.2142035
5. Vladulescu, D., Scurtu, L. G., Simionescu, A. A., Scurtu, F., Popescu, M. I., & Simionescu, O. (2023). Platelet-rich plasma (PRP) in dermatology: Cellular and molecular mechanisms of action. *Biomedicines, 12*(1), 7. https://doi.org/10.3390/biomedicines12010007
6. Sawetz, I., Lebo, P. B., Nischwitz, S. P., Winter, R., Schaunig, C., Brinskelle, P., Kamolz, L. P., Gualdi, A., & Lumenta, D. B. (2021). Platelet-rich plasma for striae distensae: What do we know about processed autologous blood contents for treating skin stretchmarks?—A systematic review. *International Wound Journal, 18*(3), 387–395. https://doi.org/10.1111/iwj.13541
7. Alves, R., & Grimalt, R. (2018). A review of platelet-rich plasma: History, biology, mechanism of action, and classification. *Skin Appendage Disorders, 4*(1), 18–24. https://doi.org/10.1159/000477353
8. Elsaie, M. L., Baumann, L. S., & Elsaaiee, L. T. (2009). Striae distensae (stretch marks) and different modalities of therapy: An update. *Dermatologic Surgery, 35*(4), 563–573. https://doi.org/10.1111/j.1524-4725.2009.01094.x
9. Zhu, C. K., Mija, L. A., Koulmi, K., Barankin, B., & Mukovozov, I. (2024). A systematic review on treatment outcomes of striae. *Dermatologic Surgery, 50*(6), 546–552. https://doi.org/10.1097/DSS.0000000000004151
10. Ebrahimi, Z., Alimohamadi, Y., Janani, M., Hejazi, P., Kamali, M., & Goodarzi, A. (2022). Platelet-rich plasma in the treatment of scars, to suggest or not to suggest? A systematic review and meta-analysis. *Journal of Tissue Engineering and Regenerative Medicine, 16*(10), 875–899. https://doi.org/10.1002/term.3338
11. Gawdat, H. I., Hegazy, R. A., Fawzy, M. M., & Fathy, M. (2014). Autologous platelet rich plasma: Topical versus intradermal after fractional ablative carbon dioxide laser treatment of atrophic acne scars. *Dermatologic Surgery, 40*(2), 152–161. https://doi.org/10.1111/dsu.12392

12. Abdel Aal, A. M., Ibrahim, I. M., Sami, N. A., & Abdel Kareem, I. M. (2018). Evaluation of autologous platelet-rich plasma plus ablative carbon dioxide fractional laser in the treatment of acne scars. *Journal of Cosmetic and Laser Therapy, 20*(2), 106–113. https://doi.org/10.1080/14764172.2017.1368667
13. Cruciani, M., Masiello, F., Pati, I., Pupella, S., & De Angelis, V. (2024). Platelet rich plasma use for treatment of acne scars: An overview of systematic reviews. *Blood Transfusion, 22*(3), 226–238. https://doi.org/10.2450/BloodTransfus.536
14. Pattinson, R. L., Trialonis-Suthakharan, N., Gupta, S., Henry, A. L., Lavallée, J. F., Otten, M., Pickles, T., Courtier, N., Austin, J., Janus, C., Augustin, M., & Bundy, C. (2021). Patient-reported outcome measures in dermatology: A systematic review. *Acta Dermato-Venereologica, 101*(9), adv00559. https://doi.org/10.2340/00015555-3884
15. Ottenhof, M. J., Veldhuizen, I. J., Hensbergen, L. J. V., Blankensteijn, L. L., Bramer, W., Lei, B. V., Hoogbergen, M. M., Hulst, R. R. W. J., & Sidey-Gibbons, C. J. (2022). The use of the FACE-Q Aesthetic: A narrative review. *Aesthetic Plastic Surgery, 46*(6), 2769–2780. https://doi.org/10.1007/s00266-022-02974-9
16. Lynch, M. D., & Bashir, S. (2016). Applications of platelet-rich plasma in dermatology: A critical appraisal of the literature. *The Journal of Dermatological Treatment, 27*(3), 285–289. https://doi.org/10.3109/09546634.2015.1094178
17. Tey, R. V., Haldankar, P., Joshi, V. R., Raj, R., & Maradi, R. (2022). Variability in platelet-rich plasma preparations used in regenerative medicine: A comparative analysis. *Stem Cells International, 2022*, 3852898. https://doi.org/10.1155/2022/3852898
18. Wu, W. S., Chen, L. R., & Chen, K. H. (2025). Platelet-rich plasma (PRP): Molecular mechanisms, actions and clinical applications in human body. *International Journal of Molecular Sciences, 26*(21), 10804. https://doi.org/10.3390/ijms262110804
19. Manole, C. G., Soare, C., Ceafalan, L. C., & Voiculescu, V. M. (2023). Platelet-rich plasma in dermatology: New insights on the cellular mechanism of skin repair and regeneration. *Life, 14*(1), 40. https://doi.org/10.3390/life14010040