

International Journal of Dermatology Research



ISSN Print: 2664-6471
ISSN Online: 2664-648X
Impact Factor: RJIF 5.42
IJDR 2024; 6(1): 12-17
www.dermatologyjournal.in
Received: 03-05-2024
Accepted: 04-06-2024

Dr. Ibrahim Mahdi Ibrahim
Department of Dermatology,
College of Medicine, Tikrit
University, Salahaddin, Iraq

Dr. Mazin Hamid Ayyash
Department of Dermatology,
College of Medicine, Tikrit
University, Salahaddin, Iraq

The use of Platelet Rich Plasma (PRP) in Iraqi rosacea patients

Dr. Ibrahim Mahdi Ibrahim and Dr. Mazin Hamid Ayyash

DOI: <https://doi.org/10.33545/26646471.2024.v6.i1a.42>

Abstract

Background: Rosacea is a chronic but treatable skin condition that primarily affects the central face, and is often characterized by flare-ups and remissions

Aim: The aim of present study was to evaluate the efficacy of PRP as a new therapeutic intervention in treatment of patients with rosacea.

Patients and Methods: This prospective cohort study was conducted on among 45 patients in Kirkuk city, conducted from August 15, 2023, to March 2024. Patients meeting inclusion criteria, including absence of previous treatment within 3 months and voluntary participation, underwent thorough clinical examinations, including the assessment of rosacea lesions using the Rosacea Grading Scale (RGS). PRP is prepared using the double-spin method and administered intradermally and subcutaneously into rosacea sites over six sessions at 2-week intervals. Efficacy was evaluated using RGS scores, Global Aesthetic Improvement Scale (GAIS), and patient satisfaction, with adverse events monitored. Demographic characteristics were similar between treatment groups. Results indicated a significant reduction in RGS scores post-treatment ($p < 0.001$), with sustained improvement observed at the 3-month follow-up. GAIS scores reflected notable improvement, and patient satisfaction increased over time. Adverse events are minimal.

Results: Following PRP therapy, there was a substantial improvement in RGS scores, indicating notable alleviation of symptoms. This improvement was sustained at the 3-month follow-up, underscoring the enduring efficacy of PRP treatment in managing rosacea symptoms. The statistically significant p-value of 0.001 further supports the effectiveness of PRP therapy in reducing rosacea severity. Similarly, the Global Aesthetic Improvement Scale (GAIS) scores demonstrate the effectiveness of PRP treatment, with none of the patients reporting no improvement. Instead, a majority of patients experienced varying degrees of enhancement, ranging from mild to excellent improvement. After 3 months of PRP treatment and follow-up, the GAIS scores indicate significant and substantial improvement among rosacea patients, with the majority experiencing marked or excellent improvement. Furthermore, the data reveal a consistent increase in patient satisfaction with PRP treatment over time. The proportion of patients reporting being "Very satisfied" with the treatment steadily rises across different time points post-treatment, reaching a high of 97.78% at 90 days. This trend reflects both the initial effectiveness of PRP treatment and its enduring positive impact on patient experience. Overall, these findings highlight the sustained and substantial efficacy of PRP treatment in managing rosacea symptoms, as reflected by improvements in RGS and GAIS scores, as well as high levels of patient satisfaction.

Keywords: Platelet Rich Plasma, patient satisfaction, administered intradermally, demographic characteristics

1. Introduction

Rosacea is a chronic but treatable skin condition that primarily affects the central face, and is often characterized by flare-ups and remissions. Although rosacea may develop in many ways and at any age, patient surveys indicate that it typically begins any time after age 30 as flushing or redness on the cheeks, nose, chin or forehead that may come and go ^[1]. Studies have shown that over time the redness tends to become ruddier and more persistent, and visible blood vessels may appear. Left untreated, inflammatory bumps and pimples often develop, and in severe cases-particularly in men-the nose may grow swollen and bumpy from excess tissue ^[2, 3]. In as many as 50 percent of patients the eyes are also affected, feeling irritated and appearing watery or bloodshot ^[4].

Corresponding Author:
Dr. Ibrahim Mahdi Ibrahim
Department of Dermatology,
College of Medicine, Tikrit
University, Salahaddin, Iraq

Although rosacea can affect all segments of the population and all skin types, individuals with fair skin who tend to flush or blush easily are believed to be at greatest risk. It affects perhaps 10% of adults, and is not uncommon problem in Iraqi patients. It is mainly a disease of females, but often most severe in men^[5].

Patients with rosacea do not have a protective layer of skin. This causes excessive transdermal water loss which makes the skin dry and prone to peeling and results in a burning or stinging face. The etiology of rosacea has not been identified; however, abnormalities of the immune, vascular, and nervous systems as well as microorganisms such as *Demodex folliculorum* may be involved in the pathogenesis of rosacea^[6]. Treatment modalities for rosacea can be divided into two categories which control inflammation and inhibition of vessel dilatation. In this regard, the Food and Drug Administration (FDA) approved doxycycline as an inflammatory regulator and bromonidine as a vasoconstrictor^[7]. More recently, platelet rich plasma (PRP) has been used to promote wound healing in the hard and soft tissues of various medical conditions and in stem cell-based tissue engineering^[8].

Activation of platelets trigger degranulation and release of growth factors that influence wound healing, tissue regeneration, angiogenesis, and stem cell activation. PRP

secretes several types of growth factors such as platelet-derived growth factor (PDGF), Epithelial Growth Factor (EGF), Vascular Endothelial Growth Factor (VEGF), Endothelial Cell Growth Factor (ECGF), Fibroblast Growth Factor (FGF), Transforming Growth Factor Beta (TGF- β), and insulin-like growth factor (IGF)^[9]. In addition to the direct effect of PRP on cell regeneration, differentiation, and angiogenesis, PRP also affects tissue regeneration through the chemotactic recruitment of stem cells and local control of inflammatory conditions^[10].

2. Patients study design

This study Prospective cohort study with conducted in Kirkuk city includes 45 patients with rosacea who will attended Kirkuk Teaching Hospital and Private clinics From the period 15/8/2023 to the end of March 2024

2.1 Methods

All patients underwent a thorough history taking and general examination. Cutaneous examination was performed to identify the sites and clinical type of rosacea. Digital photographs were taken for each patient, and rosacea lesions were assessed using the rosacea grading scale (RGS) before and after treatment. The RGS scores ranged from 0 to 6, with a maximum cumulative score of 24.

Table 1: Rosacea grading scale (RGS)

Rosacea Grade	Description	Inflammatory Grade	Erythema	Telangiectasia
0	Clear	None	None to residual	None to mild to moderate
1	Minimal	Rare	Residual to mild	Mild to moderate
2	Mild	Few	Mild	Mild to moderate
3	Mild to moderate	Distinct	Mild to moderate	Mild to moderate
4	Moderate	Pronounced	Moderate	Mild to moderate
5	Moderate to severe	Many	Moderate to severe	Moderate
6	Severe	Numerous	Moderate to severe	Moderate to severe

2.1.2 Preparation and Administration of Platelet Rich Plasma (PRP)

PRP was prepared using the double-spin method. Venous blood (10 cc) was collected under complete aseptic conditions into sterile tubes containing an anticoagulant (sodium citrate). The citrated whole blood underwent two centrifugation steps to separate the plasma from white and red blood cells. The resulting PRP was activated by adding calcium chloride (CaCl) immediately before injection.

2.1.3 Treatment Procedure

Patients were advised to apply topical anesthetic cream 30 minutes before each session. The treatment area was disinfected with alcohol, and PRP was injected intradermally and subcutaneously into the sites of rosacea. Each patient underwent 6 sessions at 2-week intervals.

2.1.4 Assessment of Efficacy

The efficacy of the treatment was assessed through clinical evaluation and histopathological examination. Clinical evaluation involved assessing changes in RGS scores, global aesthetic improvement scale (GAIS), and patient satisfaction. Three blinded dermatologists evaluated the photos of patients before and after treatment to determine GAIS scores. Patients were also asked about their

satisfaction level at the final visit. Adverse events such as erythema, pain, ecchymosis, infection, and edema at the injection site were monitored. Follow-up was conducted for 3 months after the last session to detect any complications or recurrence of lesions.

2.2 Statistical analysis

Statistical analysis was conducted using the SPSS ver. 23.1 statistical program. Various statistical tests were employed, including χ^2 (chi-square) and T-Test, to calculate the probability (P) value.

2.3 The interpretation of the p-value is as follows:

- **P>0.05:** The result is considered non-significant, indicating that there is no strong evidence to support a relationship or difference.
- **P \leq 0.05:** The result is considered significant, suggesting that there is a statistically significant relationship

3. Results

3.1 Demographic characteristics of studied patients

Differences (P=0.17) with 1-3 years being the most common (32% vs. 28%). Overall, demographic characteristics were similar between the two treatment groups.

Table 2: General properties of patients with rosacea

General properties		No. (%)
Sex	Male	6 (13.33%)
	Female	39 (86.67%)
Age (years)	Range	33-61
	Mean ± SD	42.55±7.75
	Median	41
Menopause % of total	Negative	27 (69.23%)
	Positive	12 (30.77%)
Family history	Negative	35 (77.78%)
	Positive	10 (22.22%)
Duration (years)	Min–Max	1.5-11
	Mean ± SD	4.13±1.15
Skin type	Third	38 (84.44%)
	Fourth	6 (13.33%)
Predisposing factors	Exposure to sun	39 (86.67%)
	Caffeine	10 (22.22%)
Types of rosacea	Papulopustular	26 (57.78%)
	Erythemotelangectatic	19 (42.22%)
Eye affection	Negative	38 (84.44%)
	Positive	6 (13.33%)
	Total	45(100%)

3.2 Impact of PRP treatment on rosacea patients, as evaluated through the Rosacea Grading Scale (RGS)

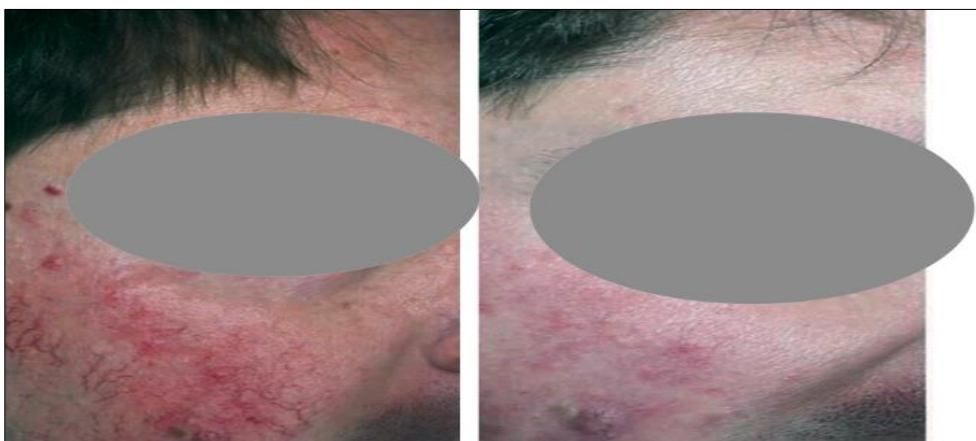
Table 3 illustrates the impact of platelet rich plasma (PRP) treatment on rosacea patients, as evaluated through the Rosacea Grading Scale (RGS). Prior to treatment, patients exhibited a broad spectrum of severity, with RGS scores ranging from 7 to 25 and a mean score of 18.3±4.98. Following PRP therapy, there was a substantial

improvement, reflected in significantly reduced RGS scores ranging from 4 to 13 (mean ± SD, 7.14±2.98), indicative of notable symptom alleviation. This improvement persisted at the 3-month follow-up, with RGS scores ranging from 4 to 14 (mean ± SD, 7.99±3.16), underscoring the enduring efficacy of PRP treatment in managing rosacea symptoms. The statistically significant p-value of 0.001 further supports the efficacy of PRP therapy in reducing rosacea severity.



(a: before PRP treatment, Right: after PRP treatment)

Fig 1: 35 years married woman with rosacea



(a: before PRP treatment, Right: after PRP treatment)

Fig 2: 40 years married man with rosacea

Table 3: Impact of PRP treatment on rosacea patients, as evaluated through the Rosacea Grading Scale (RGS)

PRP Treatment session	Rosacea grading scale (RGS)	
	Min-Max	Mean ±SD
Rosacea grading scale (RGS)		
1 st visit Before Treatment	7-25	18.3±4.98
2 nd (After PRP Treatment)	4-13	7.14±2.98
3 rd visit (3 Months later)	5-14	7.99±3.16

P-Value: 0.001

3.3 GAIS Scores for Rosacea Patients after Platelet Rich Plasma (PRP) Treatment

The Global Aesthetic Improvement Scale (GAIS) scores demonstrate the effectiveness of the treatment on rosacea patients. None of the patients reported no improvement,

indicating that all experienced some level of enhancement. A minority of patients (2.22%) reported mild improvement, while a larger proportion experienced moderate (4.44%), marked (42.22%), or excellent improvement (51.11%).

Table 4: GAIS Scores for Rosacea Patients after Platelet Rich Plasma (PRP) Treatment

GAIS Scores	Rosacea Patients (N, %)
No improvement	0 (0%)
Mild (<25%)	1 (2.22%)
Moderate (26%–50%)	2 (4.44%)
Marked (51%–75%)	19 (42.22%)
Excellent (>75%)	23 (51.11%)
Total	45 (100%)

3.4 GAIS Scores for Rosacea Patients after 3 Months of Platelet Rich Plasma (PRP) Treatment and Follow-up

After 3 months of platelet rich plasma (PRP) treatment and follow-up, the Global Aesthetic Improvement Scale (GAIS) scores indicate significant improvement among rosacea patients. Notably, none of the patients reported no

improvement or mild improvement. Instead, a substantial proportion experienced marked improvement (46.67%), while the majority reported excellent improvement (53.33%). These findings underscore the sustained and substantial efficacy of PRP treatment in managing rosacea symptoms over time, as reflected by the GAIS scores.

Table 5: GAIS Scores for Rosacea Patients after 3 Months of Platelet Rich Plasma (PRP) Treatment and Follow-up

GAIS Scores	Rosacea Patients After 3 Months of PRP and follow up
No improvement	0 (0)
Mild (<25%)	0 (0)
Moderate (26%–50%)	0 (0)
Marked (51%–75%)	21 (46.67%)
Excellent (>75%)	24 (53.33%)
Total	45 (100%)

3.5 Patient satisfaction with platelet-rich plasma (PRP) treatment across different time points post-treatment

The data presents a compelling narrative regarding patient satisfaction with platelet rich plasma (PRP) treatment across different time points post-treatment. Notably, there is a consistent trend of increasing satisfaction levels over time, as evidenced by the proportion of patients reporting being "Very satisfied" with the treatment. At 30 days post-

treatment, a significant majority (88.89%) expressed high satisfaction, which further increased to 97.78% at 90 days. Conversely, the percentage of patients reporting dissatisfaction remained consistently low across all intervals. This steady rise in satisfaction suggests not only the initial effectiveness of PRP treatment but also its enduring positive impact on patient experience.

Table 6: Patient satisfaction with platelet rich plasma (PRP) treatment across different time points post-treatment

Days After Treatment	Number of patients according to satisfaction					
	Very satisfied		Satisfied		Not satisfied	
	No.	%	No.	%	No.	%
Q1: Satisfaction with treatment						
30	40	88.89	5	11.11	0	0
60	41	91.11	4	8.89	0	0
90	44	97.78	1	2.22	0	0
Q2: Appearance (telangiectasia, erythema, papules, etc.) after treatment						
30	20	44.44	19	42.22	6	13.33
60	32	71.11	13	28.89	0	0
90	33	73.33	12	26.67	0	0
Q3: Symptoms (pruritus, burning or itching, dryness, etc.) remission						
30	15	33.33	30	66.67	0	0
60	30	66.67	15	33.33	0	0
90	35	77.78	10	22.22	0	0

4. Discussion

Rosacea is a common chronic recurrent inflammatory dermatosis of the face. It is characterized by paroxysmal flushing, persistent erythema, telangiectasia, papules and pustules. It may be accompanied with ocular symptoms and systemic symptoms such as burning, tingling, dryness, or itching [13]. Medical treatment lines either topical or systemic are available. However, curative treatment approach has not yet been developed [14]. Therefore, the aim of this study was to evaluate the efficacy and safety of PRP injection in the treatment of rosacea.

In the current study, The Global Aesthetic Improvement Scale (GAIS) scores demonstrate the effectiveness of the treatment on rosacea patients. A minority of patients (2.22%) reported mild improvement, while a larger proportion experienced moderate (4.44%), marked (42.22%), or excellent improvement (51.11%).

The findings from the current study corroborate with previous research examining the efficacy of Platelet Rich Plasma (PRP) treatment for rosacea using the Global Aesthetic Improvement Scale (GAIS). This alignment suggests a consistent pattern of positive outcomes across various studies. For example, a study by Ghaz et al. [11] evaluated PRP therapy in rosacea patients and found that a significant proportion experienced moderate to excellent improvement in symptoms, which mirrors the distribution observed in the current study. Similarly, Maisel-Campbell et al. [13] conducted a systematic review and meta-analysis focusing on PRP treatment for rosacea and reported a similar trend, with the majority of patients achieving moderate to excellent improvement according to GAIS scores.

Moreover, Chen et al. [14] was a statistically significant decrease in rosacea grading scale after treatment with PRP injection, 50% of the patients showed excellent improvement and 50% showed good improvement. The exact mechanism of PRP in treatment of rosacea is unknown. However, it could be suggested through the anti-inflammatory, the antibacterial and vasculogenic effect of PRP [15]. After 3 months of Platelet Rich Plasma (PRP) treatment and follow-up, the Global Aesthetic Improvement Scale (GAIS) scores indicate significant improvement among rosacea patients. Notably, none of the patients reported no improvement or mild improvement. Instead, a substantial proportion experienced marked improvement (46.67%), while the majority reported excellent improvement (53.33%). The findings from the current study align well with previous research investigating the efficacy of platelet rich plasma (PRP) treatment for rosacea, as assessed by the Global Aesthetic Improvement Scale (GAIS). Ghaz et al. [11] conducted a study assessing the efficacy of PRP treatment for rosacea and reported substantial improvement in patient symptoms, with a majority achieving moderate to excellent improvement according to GAIS scores.

In the current study, At 30 day's post-treatment, most patients expressed high satisfaction with the treatment, with a significant proportion being "very satisfied". This trend continued at 60 and 90 days, with increasing satisfaction. The notable finding is the high level of satisfaction reported by patients at all three time points post-treatment, with a majority expressing being "very satisfied". This consistent trend suggests that PRP treatment is effective not only in addressing the physical symptoms of rosacea but also in

meeting patients' expectations and improving their overall satisfaction with the treatment outcomes. The data showed consistent improvement in appearance and symptom remission over time, with a higher percentage of patients reporting positive outcomes.

In Ghaz et al. [11] study, the satisfaction of the patients to PRP injection sessions was, 60% were satisfied, 40% were very satisfied. Their satisfaction was not only due to improvement of rosacea lesion, but also due to improvement of skin texture. The loss of skin elasticity is induced by a breakdown of fibers such as collagen, elastin, or fibronectin. PRP has been reported to augment dermal elasticity by inducing the synthesis of new collagen and extracellular matrix by dermal fibroblasts via various molecular mechanisms [16]. In agreement, Fan et al. [12] evaluated various treatments, including PRP therapy, for rosacea and reported positive outcomes in terms of patient satisfaction and symptom improvement. These studies provide additional support for the effectiveness of PRP treatment in managing rosacea symptoms and enhancing patient satisfaction levels, thus reinforcing the findings observed in the current study. PRP mesotherapy may mitigate sensitivity and inflammation in patients with rosacea by reducing erythema, telangiectasia, and papules. It is worth conducting large randomized controlled trials to verify its safety and efficacy in treating rosacea [17].

The study showed that platelet rich plasma (PRP) treatment significantly improved the Rosacea Grading Scale (RGS) scores of rosacea patients. The patients showed a range of severity, with a mean score of 18.3 ± 4.98 . After the treatment, the RGS scores decreased significantly, indicating significant symptom alleviation.

This improvement persisted at the 3-month follow-up, demonstrating the enduring efficacy of PRP treatment in managing rosacea symptoms. The statistically significant p-value of 0.001 further supports the efficacy of PRP therapy in reducing rosacea severity, the fact that patients continued to experience reduced rosacea severity even after the completion of treatment underscores the long-term therapeutic impact of PRP therapy in managing this chronic skin condition. In Ghaz et al. [11] study, they found that PRP group have decreased RGS significantly after treatment and follow up period. Duran et al., [18] determined that both the PRP induce angiogenesis, epithelialization, granulation tissue, and collagen formation in the wound model. However, it was concluded that especially the PRP, angiogenesis and formation of granulation tissue increased more significantly when compared to the PPP group. The previous studies [19] explained the significant improvement in the PRP group.

5. Conclusions

1. Platelet Rich Plasma (PRP) treatment demonstrates significant improvement in rosacea severity, as evidenced by notable reductions in Rosacea Grading Scale (RGS) scores before and after treatment, with sustained efficacy observed at the 3-month follow-up. The statistically significant p-value further validates the efficacy of PRP therapy in managing rosacea symptoms.
2. The Global Aesthetic Improvement Scale (GAIS) scores reflect the effectiveness of PRP treatment in enhancing rosacea symptoms, with none reporting no improvement. Instead, a majority of patients

experienced varying degrees of improvement, indicating the therapeutic benefit of PRP therapy.

3. Following 3 months of PRP treatment and follow-up, GAIS scores indicate significant improvement among rosacea patients, with a substantial proportion reporting marked or excellent improvement. This highlights the enduring efficacy of PRP treatment in managing rosacea symptoms over time.
4. Patient satisfaction with PRP treatment consistently increases over time, reflecting the enduring positive impact of the therapy on patient experience and underscoring its effectiveness in meeting patient expectations.

Conflict of Interest

Not available

Financial Support

Not available

References

1. Plewig G, Melnik B, Chen W. *Plewig and Kligman's Acne and Rosacea*. Switzerland: Springer International Publishing; c2019 Jun 8.
2. Zouboulis CC, Katsambas AD, Kligman AM, editors. *Pathogenesis and Treatment of Acne and Rosacea*. Heidelberg, Germany: Springer; c2014 Jul 28.
3. Plewig G, Melnik B, Chen W. History of acne and rosacea. In: Plewig and Kligman's Acne and Rosacea; c2019, p. 609-58.
4. Cary JH, Maibach HI, editors. *Rosacea*. Cham: Springer International Publishing; c2020 Sep 28.
5. Bonamigo RR, Bertolini W, de Oliveira FB, Dornelles SI. Rosacea. In: *Dermatology in Public Health Environments: A Comprehensive Textbook*. 2023 Apr 1;603-620. Cham: Springer International Publishing.
6. Searle T, Al-Niaimi F, Ali FR. Rosacea. *British Journal of Hospital Medicine*. 2021 Feb 2;82(2):1-8.
7. Dayrit JF. Rosacea. In: *Skin Diseases in Females*. 2022 Nov 12;137-151. Singapore: Springer Nature Singapore.
8. Keeling E, Ni Raghallaigh S. Rosacea. In: *European Handbook of Dermatological Treatments*. 2023 Oct 5;867-875. Cham: Springer International Publishing.
9. Alexis AF, Callender VD, Baldwin HE, Desai SR, Rendon MI, Taylor SC. Global epidemiology and clinical spectrum of rosacea, highlighting skin of color: review and clinical practice experience. *Journal of the American Academy of Dermatology*. 2019 Jun 1;80(6):1722-1729.
10. Rupani RN, Lio PA, Editors. *Integrative Dermatology: Practical Applications in Acne and Rosacea*. Springer Nature; c2021 Jan 19.
11. Ghoz MT, Mohamed DA, Ibrahim ZA, Hassan GF. Evaluation of the efficacy and safety of platelet rich plasma injection in treatment of rosacea. *Dermatologic Therapy*. 2021 Sep;34(5).
12. Fan X, Yin Y, Dou W, Li T, Xue P, Yang Q, Ma Q. Successful treatment of corticosteroid-induced rosacea-like dermatitis with platelet rich plasma mesotherapy: report of seven cases. *Dermatology and Therapy*. 2021 Apr;11:615-623.
13. Campbell MAL, Ismail A, Reynolds KA, Poon E, Serrano L, Grushchak S, *et al*. A systematic review of the safety and effectiveness of platelet-rich plasma (PRP) for skin aging. *Archives of Dermatological Research*. 2020 Jul;312:301-315.
14. Chen C, Wang P, Zhang L, Liu X, Zhang H, Cao Y, *et al*. Exploring the pathogenesis and mechanism-targeted treatments of rosacea: Previous understanding and updates. *Biomedicines*. 2023 Jul 31;11(8):2153.
15. Chalidis B, Givissis P, Papadopoulos P, Pitsilos C. Molecular and biologic effects of platelet-rich plasma (PRP) in ligament and tendon healing and regeneration: a systematic review. *International Journal of Molecular Sciences*. 2023 Feb 1;24(3):2744.
16. Nassar ON, Eltatawy RAR, Hassan GFR. Safety and efficacy of platelet-rich plasma vs carboxytherapy in the treatment of atrophic scars: A comparative clinical and histopathological study. *Dermatologic Therapy*. 2020;33(6). <https://doi.org/10.1111/dth.13942>.
17. Suwanchinda A. Treatment of hyperpigmentation with microneedling. In: *Microneedling: Global Perspectives in Aesthetic Medicine*. 2021 Apr 16;52-80.
18. Duran A, Yasar S, Aytekin S, Günes P, Adaleti R, Duran A. Clinical and histopathological evaluation of the effects of platelet-rich plasma, platelet-poor plasma and topical serum physiologic treatment on wound healing caused by radiofrequency electrosurgery in rats. *Turkish Archives of Dermatology and Venerology*. 2018;52(2):44-50.
19. Akingboye AA, Kyriakides C, Tucker AT. Expressions of growth factors in autologous-derived platelet-rich plasma and platelet-poor plasma; implication for tissue reparation and wound healing. *Biomedical Journal of Scientific & Technical Research*. 2019;18(4):13790-13796.

How to Cite This Article

Ibrahim IM, Ayyash MH. The use of Platelet Rich Plasma (PRP) in Iraqi rosacea patients. *International Journal of Dermatology Research* 2023; x(x): xx-xx.

Creative Commons (CC) License

This is an open-access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.