Section: Orthopaedics

Original Research Article

EFFICACY OF PLATELET RICH PLASMA IN COMPARISON TO STEROID FOR THE MANAGEMENT OF CHRONIC PLANTAR FASCIITIS

Niladri Biswas[1], Rwik Roy[2], Sudipta Biswas[3]

[1]Assistant Professor, Department of Orthopaedics, JMN Medical College, Chakdaha, Nadia, West Bengal, India
[2,3]Assistant Professor, Department of Orthopaedics, Santiniketan Medical College, Bolpur, West Bengal, India

Received : 10/04/2026
Received in revised form : 20/05/2026
Accepted : 05/06/2026

Keywords:
Plantar Fasciitis, Platelet-Rich Plasma, Corticosteroid Injection, Heel Pain.

Corresponding Author:
Dr. Sudipta Biswas,
Email: biswassudipta269@gmail.com

DOI: 10.47009/jamp.2026.8.3.175

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2026; 8 (3); 973-978

ABSTRACT

Background: Chronic plantar fasciitis is one of the most common causes of persistent heel pain and is often resistant to conservative treatment. Corticosteroid injections provide rapid symptomatic relief but are associated with recurrence and potential complications. Platelet-rich plasma (PRP), a biological regenerative therapy rich in growth factors, has emerged as an alternative treatment modality aimed at promoting tissue healing. The present study was undertaken to compare the efficacy of PRP and corticosteroid injection in the management of chronic plantar fasciitis. **Materials and Methods:** This prospective comparative study was conducted in the Department of Orthopedics of a tertiary care teaching hospital over 18 months. Fifty patients with chronic plantar fasciitis refractory to conservative treatment were divided into two groups of 25 each. Group A received PRP injection, while Group B received corticosteroid injection. Pain severity was assessed using the Visual Analogue Scale (VAS), and functional outcome was evaluated using the American Orthopaedic Foot and Ankle Society (AOFAS) score at baseline, 6 weeks, 6 months, and 12 months. Statistical analysis was performed using Student's t-test, Chi-square test, and repeated measures analysis. **Result:** Baseline demographic and clinical characteristics were comparable between both groups. At 6 weeks the steroid group showed greater pain relief and functional improvement as compared to the PRP group ($p<0.001$). However, at 12 months, the PRP group demonstrated superior outcomes with lower mean VAS scores (1.7 ± 0.86 vs 3.3 ± 1.14; $p<0.001$) and higher mean AOFAS scores (92.6 ± 5.32 vs 78.8 ± 7.10; $p<0.0001$). Excellent functional outcomes were achieved in the PRP group (72%) as compared to the steroid group (36%). Complications including persistent pain, skin depigmentation and plantar fascia rupture were more frequent in the steroid group. **Conclusion:** Both PRP and corticosteroid injections are effective in management of chronic plantar fasciitis not responding to conservative measures. However, corticosteroids provide superior short-term relief whereas PRP offers better long-term pain reduction, functional recovery, and safety profile. PRP appears to be a promising regenerative treatment option for cases of chronic plantar fasciitis.

INTRODUCTION

Plantar fasciitis is one of the commonest causes of chronic plantar heel pain and represents a frequent musculoskeletal complaint in orthopaedic and rehabilitation practice. It is estimated to affect nearly 10% of the population during life and accounts for approximately 11–15% of foot-related professional consultations.[1] The condition is commonly seen in middle-aged adults, athletes, individuals with prolonged standing occupations and obesity. Chronic plantar fasciitis is generally defined as symptoms persisting beyond three to six months despite conservative management. Persistent heel pain can significantly impair walking tolerance, occupational productivity as well as sports participation. It can also affect health-related quality of life which makes effective and durable treatment clinically important.

The pathophysiology of chronic plantar fasciitis is now considered predominantly degenerative rather than purely inflammatory. Repetitive microtrauma at the medial calcaneal tubercle leads to collagen disorganization, myxoid degeneration and consequently there is thickening of the plantar fascia. In mild cases initial treatment includes rest, footwear modification, exercises, non-steroidal anti-

ISSN (O): 2687-5365; ISSN (P): 2753-6556

inflammatory drugs and physiotherapy. However severe and refractory cases injection therapies are commonly used because they are minimally invasive, relatively accessible and can provide rapid pain relief. Corticosteroid injection has traditionally been one of the most widely used interventions due to its anti-inflammatory effect and short-term analgesic benefit.[2]

Despite its popularity, corticosteroid injection has important limitations. Clinical improvement after steroid injection is often early but may diminish with longer follow-up. In addition, repeated or improperly placed injections have been associated with plantar fascia rupture, heel fat-pad atrophy, post-injection flare, infection, and local tissue weakening. These concerns are particularly relevant in chronic plantar fasciitis, where the underlying pathology is degenerative and healing failure may be more important than active inflammation. Therefore, biological therapies aimed at tissue repair have gained increasing attention.[3]

Platelet-rich plasma is an autologous blood-derived product containing concentrated platelets and growth factors, including platelet-derived growth factor, transforming growth factor-β, vascular endothelial growth factor, and insulin-like growth factor. These mediators may promote angiogenesis, collagen synthesis, tenocyte proliferation, and extracellular matrix remodelling. In chronic plantar fasciitis, PRP is proposed to address the degenerative component of disease rather than merely suppress inflammation. Several randomized and comparative studies have reported that PRP may provide better medium- to long-term pain and functional outcomes than corticosteroid injection, although results vary across studies because of differences in PRP preparation, leukocyte concentration, activation methods, injection technique, number of injections, and outcome measures.[4]

Existing literature suggests that corticosteroids may be useful for rapid short-term relief, whereas PRP may offer more sustained improvement in chronic cases. However, the superiority of one modality over the other remains incompletely established. Recent meta-analyses have highlighted both the promise of PRP and the need for better standardized comparative trials.[5] Therefore a clear knowledge gap persists regarding the relative efficacy of PRP versus steroid injection in cases of chronic plantar fasciitis. The present study intends to address this knowledge gap by comparing clinical outcomes following platelet-rich plasma and corticosteroid injection thereby helping guide evidence-based management of patients with chronic plantar fasciitis.

MATERIALS AND METHODS

This prospective comparative study was conducted in the Department of Orthopedics of a tertiary care teaching hospital over a period of 18 months after obtaining approval from the Institutional Ethics Committee. A total of 50 patients diagnosed clinically with chronic plantar fasciitis and fulfilling the predefined inclusion and exclusion criteria were included in the study after obtaining written informed consent. Patients were randomized into two groups consisting of 25 patients each by using sealed envelope method. Group A received platelet rich plasma injection whereas Group B received corticosteroid injection. Sample size was calculated based on previous comparative studies assessing differences in VAS and AOFAS scores between PRP and steroid groups, with confidence interval of 95% and statistical power of 80%. Patients aged between 18 and 65 years having symptoms persisting for more than 3 months despite adequate conservative treatment were included in the study.

Detailed demographic data including age, gender, occupation, body mass index, duration of symptoms, side involved, and associated comorbidities were recorded. All patients underwent ultrasonographic examination of the plantar fascia. A plantar fascia thickness of greater than 4.5 mm at its calcaneal origin was considered diagnostic of plantar fasciitis. Baseline investigations including complete blood count, erythrocyte sedimentation rate, fasting and postprandial blood sugar levels and radiographs of the foot were performed to exclude other causes of heel pain. Patients in Group A underwent preparation of autologous platelet rich plasma using double-spin centrifugation technique. Approximately 20 ml of venous blood was collected under strict aseptic precautions and centrifuged to obtain PRP. After local anesthesia, 3 ml of PRP was injected at the point of maximal tenderness using peppering technique. Patients in Group B received local injection of 40 mg methylprednisolone acetate mixed with local anesthetic at the site of maximum tenderness under aseptic precautions.

Following the procedure, patients in both groups were advised relative rest for 48 hours followed by gradual return to activities. Strenuous physical activity was avoided for two weeks. Stretching exercises for plantar fascia and Achilles tendon were advised in both groups. Non-steroidal anti-inflammatory medications were avoided during the study period whenever possible. Patients were followed up at 6 weeks, 6 months, and 12 months after injection therapy. At each follow-up visit, pain severity was assessed using the Visual Analogue Scale (VAS). Functional outcome was evaluated using the American Orthopaedic Foot and Ankle Society (AOFAS) score. VAS score ranged from 0 to 10, with lower scores indicating lesser pain. AOFAS scores were categorized as excellent (90-100), good (80-89), fair (60-79), and poor (<60).

Statistical analysis was performed using SPSS software version 25. Quantitative variables were expressed as mean and standard deviation, whereas categorical variables were represented as frequencies and percentages. Intergroup comparisons were performed using Student's t-test and Chi-square test where appropriate. Repeated measures analysis was

ISSN (O): 2687-5365; ISSN (P): 2753-6556

used to compare changes in VAS and AOFAS scores over different follow-up intervals. A p-value less than 0.05 was considered statistically significant.

Inclusion Criteria

- Patients aged between 18 and 65 years.
- Patients with chronic plantar fasciitis for more than 3 months.
- Patients not responding to conservative treatment.
- Patients willing to participate and provide written informed consent.

Exclusion Criteria

- Previous steroid injection or surgical intervention for plantar fasciitis.
- Heel pain due to fracture, infection, inflammatory arthritis, neuropathy, or tumor.
- Patients with uncontrolled diabetes mellitus.
- Patients with bleeding disorders or on anticoagulant therapy.
- Pregnancy.
- Local skin infection at injection site.

RESULTS

The analysis of the gender distribution of the studied cases showed that females constituted the majority of patients. In the PRP group 15 patients (60%) were females and 10 patients (40%) were males. In the steroid group, 16 patients (64%) were females and 9 patients (36%) were males. Both groups were found to be comparable in terms of gender distribution (p=1.00) [Table 1].

Table 1: Gender Distribution in the Study Groups

Gender	PRP Group (n=25)	Steroid Group (n=25)	Total	P value
Male	10 (40%)	9 (36%)	19 (38%)	1.00 Not Significant
Female	15 (60%)	16 (64%)	31 (62%)	
Total	25	25	50	

The analysis of the age distribution of the studied cases showed that the majority of patients belonged to the 41–50 years age group (38%), followed by the 51–60 (26%). The 31–40 years age group accounted for 11 cases (22%). Patients aged more than 60 years constituted 4 cases (8%) and those aged 21–30 years constituted 3 cases (6%). The mean age was 45.86 ± 10.52 years in the PRP group and 46.66 ± 10.06 years in the steroid group. The difference in age distribution between the two groups was statistically not significant (p=0.7846) [Table 2].

Table 2: Age-wise Distribution of Patients

Age Group (Years)	PRP Group	Steroid Group	Total	P value
21-30	2 (8%)	1 (4%)	3 (6%)	P = 0.7846 Not Significant
31-40	5 (20%)	6 (24%)	11 (22%)	
41-50	10 (40%)	9 (36%)	19 (38%)	
51-60	6 (24%)	7 (28%)	13 (26%)	
>60	2 (8%)	2 (8%)	4 (8%)	
Mean Age	45.86 ± 10.52	46.66 ± 10.06	50 (100%)	

The analysis of the duration of symptoms among the studied cases showed that the majority of patients had symptoms lasting between 6–12 months (58%), followed by 3–6 months duration (30%). Symptoms persisting for more than 12 months were observed in 6 cases (12%). In the PRP group, 15 patients (60%) had symptoms for 6–12 months, while in the steroid group, 14 patients (56%) had symptoms for 6–12 months [Figure 1].

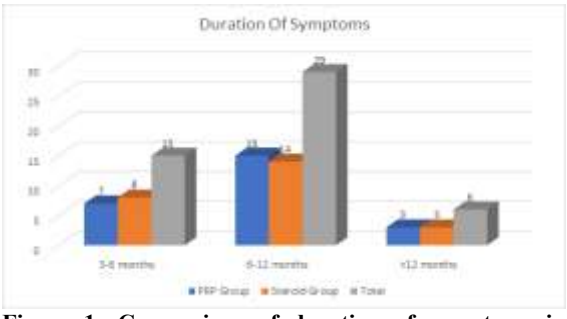

Figure 1: Comparison of duration of symptoms in studied cases.

The analysis of the body mass index of the studied cases showed that patients with normal BMI constituted the majority (46%), followed by overweight patients (34%) and obese patients (20%). In the PRP group, 12 patients (48%) had normal BMI, while 8 patients (32%) were overweight and 5 patients (20%) were obese. Similarly, in the steroid group, normal BMI was observed in 11 patients (44%), overweight in 9 patients (36%), and obesity in 5 patients (20%) [Figure 2].

Figure 2: Comparison of Body mass index in studied cases.

ISSN (O): 2687-5365; ISSN (P): 2753-6556

The analysis of mean VAS scores between the study groups showed that baseline pain scores were comparable in both the groups. At 6 weeks follow-up, the steroid group demonstrated significantly greater pain reduction with a mean VAS score of 4.1 ± 1.03 compared to 5.6 ± 1.12 in the PRP group (p<0.001). At 6 months, both groups showed comparable improvement with no statistically significant difference between them (p=0.361). However, at 12 months, the PRP group showed significantly better long-term pain relief with a mean VAS score of 1.7 ± 0.86 compared to 3.3 ± 1.14 in the steroid group (p<0.001) [Table 3].

Table 3: Comparison of Mean VAS Scores Between Groups at Different Follow-up Intervals

Follow-up Interval	PRP Group	Steroid Group	P-value
Baseline	7.1 ± 0.82	7.3 ± 0.75	0.372
6 weeks	5.6 ± 1.12	4.1 ± 1.03	<0.001
6 months	3.2 ± 1.20	3.5 ± 1.18	P = 0.361
12 months	1.7 ± 0.86	3.3 ± 1.14	<0.001

The analysis of mean AOFAS scores between the study groups showed that baseline functional scores were comparable. At 6 weeks follow-up, the steroid group demonstrated significantly better functional improvement with a mean AOFAS score of 65.1 ± 7.92 compared to 53.4 ± 8.16 in the PRP group (p<0.0001). At 6 months, both groups showed comparable functional outcomes with no statistically significant difference (p=0.2724). However, at 12 months, the PRP group showed significantly superior long-term functional improvement with a mean AOFAS score of 92.6 ± 5.32 compared to 78.8 ± 7.10 in the steroid group (p<0.0001) [Table 4].

Table 4: Comparison of Mean AOFAS Scores Between Groups at Different Follow-up Intervals

Follow-up Interval	PRP Group	Steroid Group	P-value
Baseline	35.8 ± 7.24	34.9 ± 6.88	P = 0.6543
6 weeks	53.4 ± 8.16	65.1 ± 7.92	P < 0.0001
6 months	81.7 ± 7.88	79.2 ± 8.04	P = 0.2724
12 months	92.6 ± 5.32	78.8 ± 7.10	P < 0.0001

Excellent outcomes were achieved in the majority of patients in the PRP group, accounting for 18 cases (72%), compared to 9 cases (36%) in the steroid group. Good outcomes were observed in 5 patients (20%) in the PRP group and 8 patients (32%) in the steroid group. Fair outcomes were noted in 2 patients (8%) receiving PRP and 6 patients (24%) receiving steroid injection, while poor outcomes were seen only in the steroid group in 2 cases (8%). Overall, the PRP group demonstrated superior long-term functional outcomes compared to the steroid group [Table 5].

Table 5: Functional Outcome According to Final AOFAS Scores at 12 Months

Outcome Category	PRP Group	Steroid Group
Excellent	18 (72%)	9 (36%)
Good	5 (20%)	8 (32%)
Fair	2 (8%)	6 (24%)
Poor	0	2 (8%)

Majority of patients in both groups had no complications, accounting for 24 cases (96%) in the PRP group and 18 cases (72%) in the steroid group. Persistent pain was observed in 1 patient (4%) in the PRP group compared to 4 patients (16%) in the steroid group. Skin depigmentation was noted in 2 patients (8%) and plantar fascia rupture in 1 patient (4%) in the steroid group, while no such complications were reported in the PRP group. No cases of infection were observed in either group. The difference in complication rates between the two groups was statistically significant (p=0.048) [Table 6].

Table 6: Complications Observed in the Study Groups

Complication	PRP Group	Steroid Group	P Value
Persistent Pain	1 (4%)	4 (16%)	0.048
Skin Depigmentation	0	2 (8%)	
Plantar Fascia Rupture	0	1 (4%)	
Infection	0	0	
No Complications	24 (96%)	18 (72%)	

DISCUSSION

The present prospective comparative study demonstrated that both platelet-rich plasma (PRP) and corticosteroid injections were effective in reducing pain and improving functional outcomes in chronic plantar fasciitis; however, PRP showed superior long-term efficacy at 12 months follow-up.

ISSN (O): 2687-5365; ISSN (P): 2753-6556

In the present study, most patients belonged to the 41–50 years age group with a female predominance. Riddle DL et al conducted a study to examine risk factors for plantar fasciitis. The authors identified middle age, female gender, obesity, and prolonged standing as important risk factors for plantar fasciitis. The predominance of overweight and obese individuals in the present study further supports the biomechanical theory that repetitive stress and increased plantar loading contribute significantly to chronic degeneration of the plantar fascia.

Pain assessment using the Visual Analogue Scale (VAS) in the current study revealed that corticosteroid injection produced faster symptomatic relief at 6 weeks, whereas PRP demonstrated progressive and sustained pain reduction with significantly better scores at 12 months. Similar findings were reported by Monto RR et al,[6] who observed that steroid injections were associated with early improvement but PRP provided superior long-term pain relief in chronic plantar fasciitis. similarly, Hurley et al,[7] reported significantly lower long-term VAS scores in patients treated with PRP as compared to those who received corticosteroids injection. The rapid early benefit seen with steroid injection may be explained by suppression of inflammatory mediators. However, the effect appears transient because chronic plantar fasciitis is now considered primarily a degenerative fasciopathy rather than an inflammatory condition. PRP, on the other hand, contains growth factors such as platelet-derived growth factor and transforming growth factor-beta. These factors are known to enhance angiogenesis, fibroblast proliferation and collagen remodelling, thereby promoting tissue healing and sustained symptomatic improvement.

Functional outcome evaluation using the American Orthopaedic Foot and Ankle Society (AOFAS) score also favored PRP during long-term follow-up. Although the steroid group demonstrated better functional scores at 6 weeks, the PRP group showed significantly superior AOFAS scores at 12 months. IN PRP group most patients achieved excellent functional outcomes. These findings are in agreement with the studies conducted by Jain et al,[8] and Acosta-Olivo C et al. [9] Both of these authors reported that PRP therapy resulted in better long-term functional recovery compared with corticosteroid injection. In the present study, 72% of patients in the PRP group achieved excellent final AOFAS scores compared with only 36% in the steroid group. This sustained functional improvement can be attributed to biological healing and restoration of fascia integrity in cases who were treated by PRP administration. In contrast, corticosteroids may reduce pain temporarily without significantly improving the underlying degenerative pathology which is the root cause of plantar fasciitis

The complication profile observed in the present study further supports the safety profile of PRP as compared to corticosteroid injection. Persistent pain, skin depigmentation and plantar fascia rupture were more common in the steroid group as compared to PRP group. No major complications occurred in the PRP group. Similar complications associated with corticosteroid therapy have also been described by Acevedo JI et al,[10] who reported plantar fascia rupture following steroid injection for plantar fasciitis. Similarly, Shetty VD et al,[11] observed fewer adverse effects and better patient satisfaction in PRP-treated cases as compared to steroid-treated patients. Because PRP is an autologous biological product risks related to immunological reaction and tissue degeneration are negligible. The absence of major complications in the PRP group in the present study also highlights its potential as a safer regenerative treatment modality in cases of plantar fasciitis. This is particularly important in physically active patients and individuals requiring prolonged functional recovery.

Overall, the findings of the present study support the growing evidence favoring PRP as an effective long-term treatment for chronic plantar fasciitis. The present results are also supported by the systematic review and meta-analysis conducted by Ling Y et al,[12] who concluded that PRP provides superior long-term pain relief and functional improvement compared with corticosteroid injections. Similarly, Ragab EM et al,[13] demonstrated sustained symptomatic relief following PRP therapy in chronic plantar fasciitis patients who were resistant to conservative treatment. Similar Beneficial effects of PRP injection was also reported by the authors such as Kothari U et al,[14] and Mannan M et al.[15]

Important limitations of this study include relatively small sample size and single-center design. Future multicentric studies with standardized PRP protocols and longer follow-up durations are recommended to further establish definitive treatment guidelines for chronic plantar fasciitis.

CONCLUSION

Platelet rich plasma injection is an effective treatment modality for chronic plantar fasciitis resistant to conservative management. Although corticosteroid injection provides superior short-term pain relief and early functional improvement, its effect tends to decline over time. In contrast, PRP therapy demonstrates sustained long-term reduction in pain and superior functional recovery owing to its regenerative and healing properties. Patients treated with PRP showed significantly better long-term VAS and AOFAS scores with fewer complications compared to the steroid group. Therefore, PRP appears to be a safe, biologically effective, and durable therapeutic option for the management of chronic plantar fasciitis.

REFERENCES

1. Thora, A., Tiwari, A., Bhatnagar, N., & Mohindra, M. (2018). Efficacy of platelet rich plasma in comparison to steroid for

ISSN (O): 2687-5365; ISSN (P): 2753-6556

the management of chronic plantar fasciitis. International Journal of Research in Orthopaedics, 4(3), 371–375.
2. Phadke VS, Antrolikar VV, Allamwar AR. Local injection of platelet rich plasma for plantar fasciitis. Asian J Med Sci. 2021;12(3):75-80.
3. Hansen L, Krogh TP, Ellingsen T, Bolvig L, Fredberg U. Long-Term Prognosis of Plantar Fasciitis: A 5- to 15-Year Follow-up Study of 174 Patients With Ultrasound Examination. Orthop J Sports Med. 2018 Mar 6;6(3):2325967118757983. doi: 10.1177/2325967118757983. PMID: 29536022; PMCID: PMC5844527.
4. Ağırman M. Evaluation of Balance and Fall Risk in Patients with Plantar Fasciitis Syndrome. Sisli Etfal Hastan Tip Bul. 2019 Nov 19;53(4):426-429. doi: 10.14744/SEMB.2018.68736. PMID: 32377120; PMCID: PMC7192286.
5. Riddle DL, Pulisic M, Pidcoe P, Johnson RE. Risk factors for Plantar fasciitis: a matched case-control study. J Bone Joint Surg Am. 2003 May;85(5):872-7. doi: 10.2106/00004623-200305000-00015. Erratum in: J Bone Joint Surg Am. 2003 Jul;85-A(7):1338. PMID: 12728038.
6. Monto RR. Platelet-rich plasma efficacy versus corticosteroid injection treatment for chronic severe plantar fasciitis. Foot Ankle Int. 2014 Apr;35(4):313-8. doi: 10.1177/1071100713519778. Epub 2014 Jan 13. PMID: 24419823.
7. Hurley ET, Shimozono Y, Hannon CP, Smyth NA, Murawski CD, Kennedy JG. Platelet-Rich Plasma Versus Corticosteroids for Plantar Fasciitis: A Systematic Review of Randomized Controlled Trials. Orthop J Sports Med. 2020 Apr 27;8(4):2325967120915704. doi: 10.1177/2325967120915704. PMID: 32426407; PMCID: PMC7222276.
8. Jain SK, Suprashant K, Kumar S, et al. : Comparison of plantar fasciitis injected with platelet-rich plasma vs corticosteroids. Foot Ankle Int 2018;39:780–6
9. Acosta-Olivo C, Elizondo-Rodriguez J, Lopez-Cavazos R, Vilchez-Cavazos F, Simental-Mendia M, Mendoza-Lemus O. Plantar Fasciitis-A Comparison of Treatment with Intralesional Steroids versus Platelet-Rich Plasma A Randomized, Blinded Study. J Am Podiatr Med Assoc. 2017 Nov;107(6):490-496. doi: 10.7547/15-125. Epub 2016 Oct 11. PMID: 27726423.
10. Acevedo JI, Beskin JL. Complications of plantar fascia rupture associated with corticosteroid injection. Foot Ankle Int. 1998 Feb;19(2):91-7. doi: 10.1177/107110079801900207. PMID: 9498581.
11. Shetty VD, Dhillon M, Hegde C, Jagtap P, Shetty S. A study to compare the efficacy of corticosteroid therapy with platelet-rich plasma therapy in recalcitrant plantar fasciitis: a preliminary report. Foot Ankle Surg. 2014 Mar;20(1):10-3. doi: 10.1016/j.fas.2013.08.002. Epub 2013 Aug 16. PMID: 24480492.
12. Ling Y., Wang S. Effects of platelet-rich plasma in the treatment of plantar fasciitis: a meta-analysis of randomized controlled trials. Medicine (Baltim) 2018 Sep;97(37) doi: 10.1097/MD.0000000000012110.
13. Ragab EM, Othman AM. Platelets rich plasma for treatment of chronic plantar fasciitis. Arch Orthop Trauma Surg. 2012 Aug;132(8):1065-70. doi: 10.1007/s00402-012-1505-8. Epub 2012 May 4. PMID: 22555761
14. Kothari U, Shah S, Pancholi D, Chaudhary C. Efficacy and Safety of Platelet-Rich Plasma Injection for Chronic Plantar Fasciitis: A Prospective Study on Functional Restoration and Pain Relief. Cureus. 2024 Jan 16;16(1):e52414. doi: 10.7759/cureus.52414. PMID: 38371014; PMCID: PMC10869993.
15. Mannan M, Karim F, Hafeez U, Khalil S. Efficacy of Platelet-Rich Plasma (PRP) in Treating Plantar Fasciitis. Cureus. 2024 Oct 26;16(10):e72454. doi: 10.7759/cureus.72454. PMID: 39600742; PMCID: PMC11589164.

ISSN (O): 2687-5365; ISSN (P): 2753-6556