e-ISSN: 0976-822X, p-ISSN:2961-6042

Available online on http://www.ijcpr.com/

International Journal of Current Pharmaceutical Review and Research 2026; 18(1); 1674-1677

Original Research Article

Comparative Study Between Single Dose Intralesional Autologous Blood (Platelet-Rich Plasma) and Corticosteroid Injection in Chronic Plantar Fasciitis

Ankur Vinod Bansod[1], Ch Imobi Singh[2], Apoorva V. Dodia[3]

[1]PGT, Department of Orthopaedics, JNIMS, Imphal, India
[2]Associate Professor, Department of Orthopaedics, JNIMS, Imphal, India
[3]Associate Professor, Department of Orthopaedics, Shri M.P. Shah Government Medical College Jamnagar, India

Received: 28-10-2025 / Revised: 27-11-2025 / Accepted: 26-12-2025
Corresponding Author: Lungsumpou Gonmei
Conflict of interest: Nil

Abstract:

Background: Heel pain is frequently caused by chronic plantar fasciitis. Although injections of corticosteroids offer temporary alleviation, platelet-rich plasma (PRP) has become a viable restorative option.

Aim: To evaluate the effectiveness of corticosteroid injection versus single-dose intralesional autologous PRP in treating persistent plantar fasciitis.

Methods: A one-year randomized clinical trial with 72 patients split into two groups (n = 36 each) was carried out. One PRP injection was given to Group A, whereas a corticosteroid injection was given to Group B. At baseline and six months, the Visual Analogue Scale (VAS) was used to evaluate the results. The threshold for statistical significance was $p < 0.05$.

Results: Significant progress was made by both groups (p=0.001). Compared to steroids (4.1 ± 1.1), PRP showed a higher long-term pain reduction (mean VAS 2.3 ± 0.9), p=0.001.

Conclusion: For chronic plantar fasciitis, PRP offers better long-term pain alleviation than corticosteroids.

Keywords: Chronic Plantar Fasciitis, Randomized Clinical Trial, Visual Analogue Scale (VAS), Corticosteroid, Intra-Lesion.

DOI: 10.25258/ijcpr.18.1.287

Introduction

One of the most prevalent reasons of inferior heel pain is chronic plantar fasciitis, which primarily affects middle-aged adults and physically active people. It makes up a significant amount of outpatient orthopaedic consultations and over 10% of running-related injuries. Degeneration and microtearing of the plantar fascia at its origin on the medial calcaneal tuberosity are the condition's hallmarks [1]. This results in chronic heel discomfort, which usually gets worse when you walk for the first time in the morning or after spending a lot of time at rest. Even though they frequently go away on their own, symptoms can become persistent and seriously affect everyday activities, job performance, and quality of life [2].

The mainstay of treatment is still conservative management, which consists of physiotherapy, nonsteroidal anti-inflammatory medications, orthotics, stretching exercises, activity moderation, and rest. Although the majority of patients benefit from these interventions, a small percentage experience resistant symptoms that call for interventional treatment [3]. Injections of corticosteroids have long been utilized because of their strong anti-inflammatory properties and quick pain relief. Potential side effects, such as plantar fascia rupture, fat pad atrophy, and symptom recurrence, have drawn criticism, nevertheless [4].

Platelet-rich plasma (PRP) has become a viable biological therapeutic option in recent years. PRP is an autologous platelet concentration that produces cytokines and growth factors that support collagen production, angiogenesis, and tissue repair [5]. PRP may provide long-lasting symptom relief by treating the degenerative rather than just inflammatory aspects of chronic plantar fasciitiss [6]. The purpose of this study is to evaluate the effectiveness of corticosteroid injection and single-dose PRP in treating persistent plantar fasciitis.

Methods

To be able to assess treatment outcomes for individuals with chronic plantar fasciitis lasting longer than six months, a prospective randomized

clinical study was carried out over a one-year period. 72 patients who satisfied the requirements for inclusion were split into two equal groups at random. A single intralesional injection of platelet-rich plasma (PRP) was administered to Group A (n = 36), and a single injection of corticosteroid was administered to Group B (n = 36). The Visual Analogue Scale (VAS) was used to measure the degree of pain at baseline before to intervention and again at six months to gauge clinical change.

Statistical analysis: Independent and paired t-tests were used for statistical analysis. At $p < 0.05$, significance was taken into account.

Results

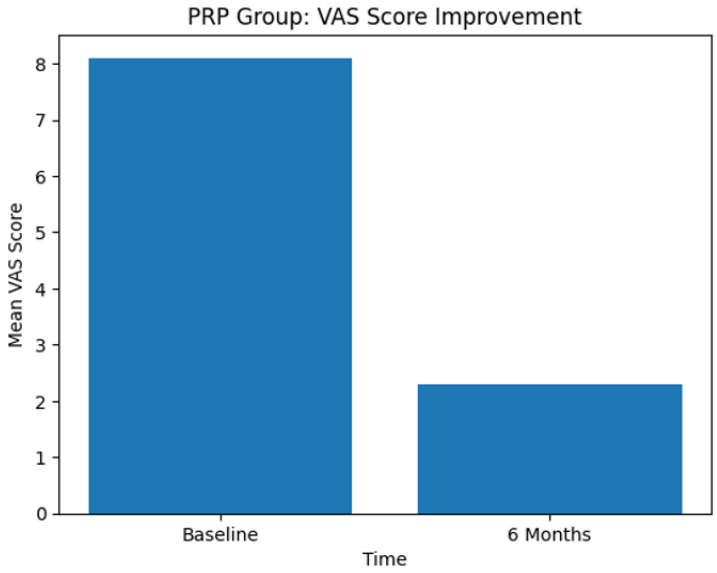

Figure 1: PRP group-VAS score improvement

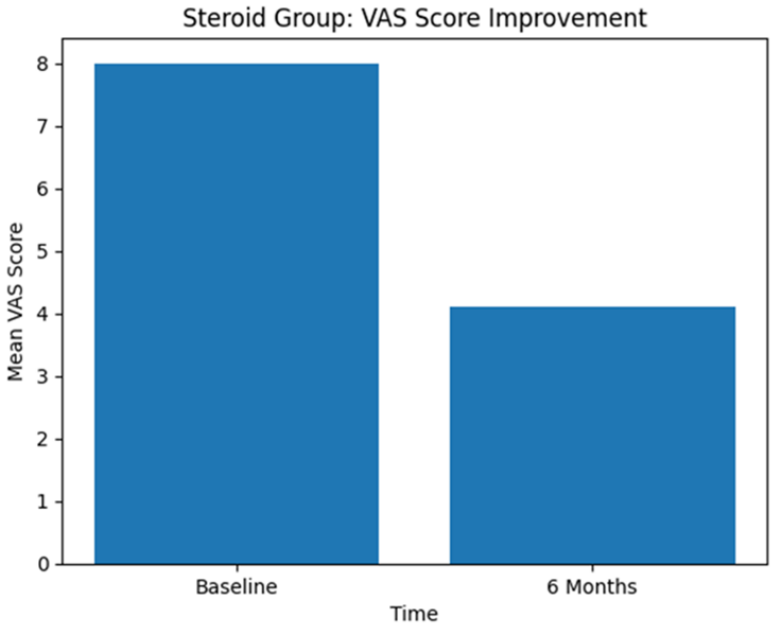

Figure 2: Steroid group-VAS score improvement

Table 1: Baseline Characteristics

Variable	PRP Group (n=36)	Steroid Group (n=36)	p-value
Mean Age (years)	42.5 ± 6.2	43.1 ± 5.8	0.72
Male (%)	55%	52%	0.81
Female (%)	45%	48%	0.81
Mean Duration of Symptoms (months)	8.2 ± 1.4	8.0 ± 1.6	0.65

Table 2: Comparison of VAS Scores Between Groups

Outcome Measure	PRP Group (Mean ± SD)	Steroid Group (Mean ± SD)	p-value
Baseline VAS	8.1 ± 0.8	8.0 ± 0.7	0.68
6-Month VAS	2.3 ± 0.9	4.1 ± 1.1	0.001*

*Statistically significant ($p < 0.05$)

Table 3: Within-Group Improvement in VAS Scores

Group	Baseline VAS	6-Month VAS	Mean Difference	p-value
PRP	8.1	2.3	5.8	0.001*
Steroid	8.0	4.1	3.9	0.001*

*Statistically significant ($p < 0.05$)

Table 4: Complications

Complication	PRP Group (n=36)	Steroid Group (n=36)	p-value
Post-injection Pain	3 (8.3%)	5 (13.9%)	0.42
Infection	0	1 (2.8%)	0.31
Plantar Fascia Rupture	0	1 (2.8%)	0.15

Discussion

Both platelet-rich plasma (PRP) and corticosteroid injections significantly reduce pain in patients with persistent plantar fasciitis, according to this randomized clinical research. At the six-month follow-up, PRP demonstrated higher long-term efficacy, suggesting a longer-lasting therapeutic benefit [1]. Its restorative qualities could be the reason for the improved results shown in the PRP group. Concentrated platelets found in PRP release growth factors such transforming growth factor-beta (TGF-β) and platelet-derived growth factor (PDGF), which promote tissue remodeling, angiogenesis, and collagen formation [7]. Rather than merely reducing inflammation, these biological benefits target the degenerative pathology that underlies chronic plantar fasciitis [8].

Corticosteroids, on the other hand, mainly reduce inflammation and frequently offer quick, temporary pain relief. Even while this early recovery may have clinical benefits, there are still worries about symptom return and possible side effects, such as fat pad atrophy and plantar fascia rupture [9]. Although the difference was not statistically significant, mild problems were somewhat more common in the corticosteroid group in the current trial. Crucially, the PRP group's higher percentage decrease in pain levels (71.6% as opposed to 48.7% in the steroid group) highlights the benefit of this biologically restorative therapy over a symptomatic one [6].

These results are in line with new research that suggests PRP can be used to treat degenerative soft tissue diseases and chronic tendinopathies. Additionally, this study's single-dose protocol increases cost-effectiveness, decreases patient burden, and improves feasibility. All things considered, PRP seems to be a viable long-term remedy for persistent plantar fasciitis [10].

Conclusion

For long-lasting pain relief from persistent plantar fasciitis, a single intralesional PRP injection works better than a corticosteroid injection. For long-term care, PRP offers a more reliable and secure treatment option.

References

1. Vahdatpour B, Kianimehr L, Ahrar MH. Autologous platelet - rich plasma compared with whole blood for the treatment of chronic plantar fasciitis ; a comparative clinical trial. Adv Biomed Res. 2016;5(84):1–8.
2. Arya AK, Chandan K, Kumarverma P, Kumar S. To Compare the Relative Effectiveness of Intralesional Steroid Versus Platelet-Rich Plasma Injection among 80 Patients in Plantar Fasciitis : A Prospective Study. J Orthop Traumatol Rehabil. 2022;14(2):121–5.
3. Mouneshwaran R, Vijayaragavan R. A comparative study of functional outcome of single dose intra-lesional platelet rich plasma injection versus single dose corticosteroid injection for plantar fasciitis. Int J Orthop Sci. 2024;10(1):177–81.
4. Puri VP, Gaur AK. A comparative study between local injection of autologous platelet rich plasma and injection of corticosteroid in functional improvement of plantar fasciitis. Int Surg J. 2019;6(3):653–7.

5. Kumar K, Rao V, Panda A, Sathyendra KG, Buddhist H. Comparison of Platelet-Rich Plasma and Corticosteroid Injections for Chronic Plantar Fasciitis : A Randomized Controlled Trial. Cureus. 2024;16(5):1–7.
6. Sawan ZH, El-tohamy SA, Elhossieny KM, Basha OHA, Hafez AS. Analgesic efficacy and functional outcome in refractory cases of plantar fasciitis treated with platelet-rich plasma : randomized comparative study with corticosteroids injection. Egypt J Anaesth [Internet]. 2023;39(1):477–87.
7. Borgohain M, Phukon R. Study the efficacy of platelet rich plasma and local corticosteroid injection for treatment of chronic plantar fasciitis. Int J Res Orthop. 2020;6(2):281–5.
8. Fadadu S, Raval D, Balochiya P. Comparative Evaluation of Pain Relief in Chronic Plantar Fasciitis : Platelet-Rich Plasma vs . Corticosteroid Injections. Int J Curr Pharm Rev Res. 2025;17(10):687–90.
9. Kumar DA, Koramutla HK. Efficacy of intralesional corticosteroid versus autologous platelet rich plasma injection in the management of chronic plantar fasciitis. Int J Res Orthop. 2018;4(5):790–6.
10. B MKN, Deepanand TS. A comparative study between single dose intralesional autologous blood and corticosteroid injection in chronic plantar fasciitis-a short term follow-up study. Int J Res Med Sci. 2023;11(3):880–4