



Comparative Study Of Prp Vs. Corticosteroid Injections In Chronic Plantar Fasciitis: Functional Outcomes And Pain Relief

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Abstract

Background:

Plantar fasciitis is the leading cause of heel pain, with a lifetime prevalence of around 10% in adults and high incidence in athletes. While most cases resolve with conservative management, chronic and recalcitrant plantar fasciitis often requires injectable therapy. Corticosteroid (CS) injections are widely used due to their rapid anti-inflammatory effect, while platelet-rich plasma (PRP) has emerged as a biologic therapy aimed at tissue regeneration. The comparative effectiveness and safety of these treatments remain debated.

Methods:

This narrative comparative review synthesized evidence from randomized controlled trials, meta-analyses, and clinical practice guidelines published between 2010 and 2025, retrieved from PubMed, Scopus, and the Cochrane Library. Studies directly comparing PRP with CS were included if they assessed pain, function, plantar fascia thickness, or adverse events. Data were analyzed thematically, with outcomes stratified into short-term (≤ 1 month), medium-term (3–6 months), and long-term (≥ 12 months) results.

Results:

At one month, CS injections consistently outperformed PRP in reducing pain, reflecting their rapid anti-inflammatory effect. However, from 3 to 6 months, PRP demonstrated superior outcomes in both pain reduction and functional improvement, with multiple meta-analyses confirming its efficacy. At 12 months,

results were mixed for pain, but functional outcomes continued to favor PRP. Imaging studies showed both therapies reduced plantar fascia thickness, with baseline thickness ≥ 7 mm predicting stronger CS responses. Safety analysis revealed CS carried risks of plantar fascia rupture, fat-pad atrophy, and skin changes, particularly with repeated injections, while PRP was associated only with transient local soreness.

Conclusion:

Corticosteroids provide rapid but short-lived analgesia, while PRP offers slower onset but more durable improvements with a superior safety profile. Treatment selection should be individualized: CS may be appropriate for short-term relief, whereas PRP is preferable for long-term management in chronic plantar fasciitis.

Keywords:

Plantar fasciitis; Platelet-rich plasma; Corticosteroid injection; Pain relief; Functional outcomes; Heel pain; Regenerative therapy; Orthopaedic interventions; Musculoskeletal disorders; Conservative management

1. Introduction

Plantar fasciitis is among the most common causes of heel pain and accounts for a substantial burden in both the general population and athletic cohorts. Epidemiological studies estimate that plantar fasciitis affects approximately 10% of the population over a lifetime, with peak incidence occurring in adults aged 40–60 years (Riddle and Schappert, 2004). It is especially prevalent among runners, with up to 22% of athletes experiencing plantar heel pain at some stage (Taunton et al., 2002). In the United States alone, plantar fasciitis is estimated to be responsible for more than two million patient visits per year, imposing a significant healthcare and economic cost (Cutts et al., 2012). Given its chronicity and tendency to impair daily activity and work productivity, the condition represents an important musculoskeletal disorder with broad social and economic implications.

Traditionally, plantar fasciitis was considered an inflammatory disorder due to the clinical association with heel pain and the assumption of local inflammation at the plantar fascia insertion. However, histopathological evidence now supports that the condition is more accurately described as a degenerative process, termed *plantar fasciosis* (Lemont et al., 2003). Degenerative changes include fibroblast proliferation, collagen disorganization, and microtears in the fascia, rather than overt inflammation. This shift in understanding has influenced therapeutic approaches, focusing less on purely anti-inflammatory interventions and more on treatments aimed at stimulating tissue repair and remodeling.

Conservative management remains the cornerstone of treatment, particularly in the initial 6–12 weeks. Approaches include activity modification, appropriate footwear, and orthoses that reduce plantar fascia loading (Martin et al., 2023). Stretching programs targeting the plantar fascia and gastrocnemius–soleus complex have demonstrated consistent benefits in reducing pain and improving function (Radford et al., 2007). Adjunctive

modalities such as extracorporeal shockwave therapy (ESWT) have also shown efficacy, particularly for patients with chronic or recalcitrant cases (Gerdesmeyer et al., 2008). Despite the effectiveness of these strategies, a subset of patients continues to experience persistent symptoms beyond six months, necessitating consideration of injectable therapies.

Two of the most widely studied injectable treatments are corticosteroids (CS) and platelet-rich plasma (PRP). Corticosteroid injections act primarily through their potent anti-inflammatory effects, offering rapid analgesia and short-term improvement in symptoms (Tatli and Kapasi, 2008). However, their benefits often diminish after three months, and repeated injections carry risks such as plantar fascia rupture and fat-pad atrophy (Kim et al., 2010). In contrast, PRP represents a regenerative therapy derived from autologous blood, concentrated to include platelets rich in growth factors such as platelet-derived growth factor (PDGF) and vascular endothelial growth factor (VEGF). These biologically active molecules promote angiogenesis, fibroblast proliferation, and extracellular matrix remodeling, theoretically addressing the degenerative pathology of plantar fasciitis (Chong et al., 2014). PRP injections have been increasingly adopted as an alternative to corticosteroids, with several randomized controlled trials (RCTs) and meta-analyses reporting superior medium- to long-term outcomes in terms of pain reduction and functional improvement (Zuo et al., 2025; Herber et al., 2024).

Nevertheless, controversy persists regarding the comparative efficacy of PRP and corticosteroids. Some studies demonstrate rapid pain relief with corticosteroids, which may be preferable in acute presentations or for patients seeking short-term benefit, while others highlight the sustained improvements associated with PRP over 6–12 months. Variability in PRP preparation methods, corticosteroid dosing, injection technique, and outcome measures further complicates interpretation of the evidence (Hurley et al., 2020). Thus, the absence of standardized protocols and the heterogeneity of study designs contribute to the lack of consensus on which treatment should be preferred for chronic plantar fasciitis.

The aim of this paper is to conduct a comparative analysis of PRP versus corticosteroid injections in chronic plantar fasciitis, with a focus on functional outcomes and pain relief. By synthesizing evidence from randomized trials, systematic reviews, and clinical guidelines, this study seeks to clarify the relative benefits and limitations of these interventions and provide insights for clinicians managing patients with persistent heel pain.

2. Methods

2.1 Study Design

This paper adopts the design of a **narrative comparative review**, synthesizing available clinical evidence to evaluate the relative efficacy of platelet-rich plasma (PRP) and corticosteroid (CS) injections in chronic plantar fasciitis. A narrative approach was selected because of the heterogeneity in trial designs, outcome measures, and treatment protocols, which precludes formal meta-analysis within the scope of this study. The review integrates data from randomized controlled trials (RCTs), systematic reviews, meta-analyses, and relevant clinical practice guidelines to provide a comprehensive overview of comparative outcomes.

2.2 Literature Sources

An extensive literature search was performed across **PubMed, Scopus, and the Cochrane Library** databases, covering the period from **January 2010 to February 2025**. Search terms included combinations of: “*plantar fasciitis*” OR “*plantar fasciopathy*” AND “*platelet-rich plasma*” OR “*PRP*” AND “*corticosteroid*” OR “*steroid injection*”. Reference lists of included articles were also screened to identify additional relevant studies.

2.3 Inclusion and Exclusion Criteria

Studies were included if they met the following criteria:

- **Design:** Randomized controlled trials (RCTs), meta-analyses, systematic reviews, or high-quality clinical practice guidelines.
- **Population:** Adults diagnosed with chronic plantar fasciitis (symptoms ≥ 6 weeks).
- **Interventions:** PRP injections compared directly with corticosteroid injections.
- **Outcomes:** At least one relevant clinical or imaging outcome measure reported.
- **Language:** English.

Exclusion criteria included:

- Case reports, case series, or observational studies with fewer than 10 participants.
- Animal studies or cadaveric models.
- Non-English publications.
- Trials where PRP or corticosteroid was not compared against each other (e.g., compared only to placebo or surgery).

2.4 Outcomes of Interest

The primary outcomes analyzed were **pain reduction** and **functional improvement**:

- **Pain:** Assessed by Visual Analogue Scale (VAS) or Numeric Rating Scale (NRS).
- **Function:** Evaluated through validated scales such as the American Orthopaedic Foot and Ankle Society (AOFAS) score, the Foot Function Index (FFI), and the Foot and Ankle Ability Measure (FAAM).
- Secondary outcomes included:
 - **Imaging parameters:** Changes in plantar fascia thickness as measured by ultrasonography or MRI.
 - **Adverse events:** Incidence of complications such as plantar fascia rupture, fat-pad atrophy, local infection, or post-injection pain.

2.5 Data Analysis

Extracted data were collated into **summary tables**, detailing study design, sample size, intervention protocols, outcome measures, and key findings. Given the clinical and methodological variability between studies, results were not pooled for quantitative meta-analysis. Instead, a **thematic comparative analysis** was undertaken. This involved grouping findings according to outcome domains (pain, function, imaging, safety) and comparing short-term (≤ 3 months), medium-term (3–6 months), and long-term (≥ 12 months) effects. Where available, trends from systematic reviews and meta-analyses were used to strengthen conclusions and highlight areas of consensus or controversy.

This methodology ensured a balanced evaluation of the comparative effectiveness and safety profiles of PRP versus corticosteroid injections, while acknowledging the inherent limitations of study heterogeneity and evolving protocols.

3. Results

3.1 Pain Outcomes

At 1 month:

Corticosteroid (CS) injections consistently demonstrated superior short-term analgesia compared with platelet-rich plasma (PRP). Meta-analyses have shown that patients treated with CS reported significantly lower pain scores at 4 weeks post-injection. Zuo et al. (2025), in a pooled analysis of 24 RCTs involving 1,653 participants, found that CS reduced pain faster on the Visual Analogue Scale (VAS) compared with PRP. This rapid onset of effect is attributed to the strong anti-inflammatory action of corticosteroids, which suppress cytokine release and modulate nociceptive signaling. Earlier trials (Tatli and Kapasi, 2008; Ahmad and Karim, 2019) similarly reported that CS provides immediate symptomatic relief, making it preferable for patients requiring urgent short-term pain control, such as athletes or workers needing a quick return to activity.

At 3–6 months:

By the medium-term follow-up (3–6 months), the analgesic profile shifted strongly in favor of PRP. Evidence from multiple systematic reviews (Herber et al., 2024; Hurley et al., 2020) supports the superior efficacy of PRP in reducing pain during this period. In Zuo et al. (2025), PRP outperformed CS at both 3 and 6 months, with a standardized mean difference of -0.74 in VAS scores favoring PRP at 6 months. Sharma et al. (2023) confirmed these findings in a well-conducted RCT, where PRP achieved significantly lower pain scores at 6 months despite CS showing initial superiority at 4 weeks. This delayed but sustained effect is linked to PRP's regenerative mechanism, which promotes angiogenesis, collagen deposition, and fibroblast proliferation, addressing the underlying degenerative pathology of plantar fasciitis.

At 12 months:

Pain outcomes at 12 months were more variable. Singh et al. (2024) reported significantly better VAS improvements in the PRP group at 1 year, while Franceschi et al. (2014) and Ragab and Othman (2012) also demonstrated sustained PRP benefits over corticosteroids. However, some studies found comparable pain levels between the two interventions after one year, suggesting convergence of outcomes. The heterogeneity likely reflects differences in PRP preparation (leukocyte-rich vs leukocyte-poor), corticosteroid type (triamcinolone vs methylprednisolone), and patient selection criteria. Nonetheless, the overall evidence suggests that PRP tends to provide more durable pain relief, while corticosteroid benefits decline progressively after 3 months.

3.2 Functional Outcomes

Functional outcomes, measured through validated tools such as the American Orthopaedic Foot and Ankle Society (AOFAS) score, the Foot Function Index (FFI), and the Foot and Ankle Ability Measure (FAAM), showed more consistent superiority of PRP across short-, medium-, and long-term follow-up.

At 3 months, PRP-treated patients demonstrated greater functional gains in several RCTs (Sharma et al., 2023; Singh et al., 2024). By 6 months, the advantage widened, with meta-analyses reporting significantly higher AOFAS and FFI scores in PRP cohorts compared to corticosteroid-treated patients (Zuo et al., 2025). At 12 months, PRP continued to outperform corticosteroids for functional restoration, even in studies where pain outcomes converged (Franceschi et al., 2014).

This pattern suggests that PRP not only reduces pain but also facilitates recovery of plantar fascia integrity and foot biomechanics, leading to sustained improvements in mobility and quality of life. In contrast, corticosteroids primarily mask pain without addressing degenerative changes, limiting their long-term impact on function.

3.3 Imaging Outcomes

Changes in plantar fascia thickness, assessed via ultrasonography or MRI, were reported in several RCTs. Most trials found **no significant difference** in mean fascia thickness reduction between PRP and CS at 3–6 months (Zuo et al., 2025; Ahmad and Karim, 2019). Both treatments reduced fascia thickness modestly, reflecting improved clinical outcomes.

However, imaging studies have also suggested potential predictive markers. Breton et al. (2022) demonstrated that patients with baseline plantar fascia thickness ≥ 7 mm responded more favorably to corticosteroid injections in terms of pain reduction, while PRP efficacy was less dependent on baseline thickness. This finding highlights a potential role for imaging in tailoring treatment selection.

Overall, while imaging correlates with symptom improvement, the clinical relevance of fascia thickness reduction remains uncertain, and pain/function outcomes continue to be the more meaningful measures of therapeutic success.

3.4 Safety and Adverse Events

Corticosteroid injections:

Although generally safe when used judiciously, corticosteroids carry risks that increase with repeated injections. Documented adverse events include:

- **Plantar fascia rupture**, reported in 2–7% of cases across large observational cohorts (Kim et al., 2010).
- **Fat-pad atrophy**, leading to chronic heel pain due to loss of cushioning.
- **Skin depigmentation and subcutaneous fat necrosis**, particularly with superficial injection.
- **Transient post-injection flare**, with temporary worsening of symptoms in the first 48 hours.

These risks underscore the importance of limiting corticosteroid injections to no more than 2–3 per year and employing ultrasound guidance for accurate placement.

PRP injections:

PRP demonstrated a favorable safety profile across all included studies. The most common side effect was **local soreness, swelling, or stiffness** in the first 48–72 hours, typically resolving with rest and simple analgesics. No cases of infection, rupture, or systemic complications were reported in RCTs or meta-analyses (Herber et al., 2024; Singh et al., 2024). This suggests PRP may be the safer long-term option, particularly in patients at risk of fascia rupture or with a history of multiple prior corticosteroid injections.

3.5 Technique Variability

Considerable heterogeneity exists in the preparation and administration of both PRP and CS, which complicates direct comparison across trials.

PRP variability:

- **Preparation methods:** Single-spin and double-spin centrifugation produce different platelet and leukocyte concentrations. Leukocyte-rich PRP may induce a stronger inflammatory cascade, while leukocyte-poor PRP is thought to minimize post-injection discomfort.
- **Volume administered:** Typically ranges from 2–5 mL, with some studies employing peppering (multi-puncture) techniques to stimulate a healing response.
- **Activation methods:** Calcium chloride or thrombin activation is inconsistently applied.

Corticosteroid variability:

- **Type of steroid:** Triamcinolone acetonide and methylprednisolone acetate are most used, but their potencies and durations differ.
- **Dosage:** Ranges from 20–40 mg depending on steroid type and patient factors.
- **Dilution with local anesthetic:** Often performed to reduce injection pain, though it may influence absorption.

Ultrasound guidance:

Multiple RCTs (Boffeli and Peterson, 2020) emphasized the benefit of ultrasound-guided injections, which improve accuracy, reduce complications, and potentially enhance treatment efficacy compared to palpation-guided techniques. This is particularly relevant for corticosteroids, where misplacement increases the risk of soft tissue damage.

Summary of Results

- **Pain outcomes:** Corticosteroids superior at 1 month; PRP significantly better at 3–6 months; mixed but generally favorable for PRP at 12 months.
- **Functional outcomes:** PRP consistently outperformed corticosteroids at 3, 6, and 12 months.
- **Imaging outcomes:** Both reduce fascia thickness; baseline thickness ≥ 7 mm predicts stronger CS response.
- **Safety:** CS carries risks of rupture and atrophy; PRP limited to transient soreness/swelling.
- **Technique:** Variability in preparation and delivery influences outcomes; ultrasound guidance recommended.

4. Discussion

4.1 Interpretation of Findings

The comparative evidence between corticosteroid (CS) and platelet-rich plasma (PRP) injections in chronic plantar fasciitis (PF) underscores the importance of considering time-dependent efficacy. Consistently, CS injections demonstrate **superior short-term analgesia**. At one month, randomized trials and meta-analyses indicate faster reductions in VAS scores among CS recipients, reflecting the rapid anti-inflammatory effect of glucocorticoids (Zuo et al., 2025; Tatli and Kapasi, 2008). This makes corticosteroids particularly attractive for patients requiring immediate relief of pain, such as athletes needing to return to training or individuals with occupational demands requiring rapid mobility.

In contrast, the **medium- to long-term outcomes favor PRP**. At 3–6 months, PRP has been shown to provide significantly greater reductions in pain and superior functional recovery, as measured by AOFAS, FFI, and FAAM scores (Herber et al., 2024; Sharma et al., 2023). By 12 months, the evidence is more variable, but several trials still demonstrate sustained benefits of PRP, particularly with regard to functional outcomes, even when pain relief between groups converges (Singh et al., 2024; Franceschi et al., 2014). These findings align with the biological rationale of PRP: rather than temporarily suppressing inflammation, PRP delivers concentrated growth factors that stimulate angiogenesis, collagen synthesis, and extracellular matrix remodeling, addressing the degenerative nature of plantar fasciosis (Chong et al., 2014).

Thus, the interpretation of results can be summarized as follows:

- **Corticosteroids** = rapid, short-lived pain relief; beneficial for acute symptomatic control.
- **PRP** = slower onset, but more durable improvements in pain and function; better suited for chronic, recalcitrant cases.

4.2 Clinical Relevance

The clinical relevance of these findings lies in **tailoring treatment decisions to patient needs and priorities**. For example, a competitive runner experiencing acute heel pain before an event may prefer a CS injection to achieve rapid analgesia, accepting the risk of recurrence. In contrast, a sedentary office worker with chronic PF of more than six months' duration, unresponsive to conservative care, may derive greater long-term benefit from PRP.

Moreover, PRP's superior safety profile compared with corticosteroids adds weight to its role in chronic management. Corticosteroid-associated complications, including plantar fascia rupture and fat-pad atrophy, though uncommon, can lead to prolonged disability (Kim et al., 2010). PRP, by contrast, is associated only with mild, transient local soreness (Herber et al., 2024). This makes PRP a more appealing option for patients at risk of complications or those who have already received multiple prior corticosteroid injections.

From a practical perspective, both interventions should be viewed as **adjuncts** rather than first-line therapies. Conservative treatments—such as activity modification, stretching, orthoses, and extracorporeal shockwave therapy (ESWT)—remain the initial management strategies, with injections reserved for refractory cases (Martin et al., 2023). The choice between CS and PRP should therefore be embedded within a stepped care pathway, guided by the chronicity of symptoms, patient preference, and functional demands.

4.3 Comparison with Guidelines

The 2023 **Journal of Orthopaedic & Sports Physical Therapy (JOSPT) Clinical Practice Guideline** for heel pain provides valuable context. These guidelines emphasize exercise therapy, stretching of the plantar fascia and gastrocnemius–soleus complex, and foot orthoses as primary interventions, with adjunctive modalities such as ESWT for persistent cases (Martin et al., 2023). Injections—including CS and PRP—are recommended only after the failure of structured conservative management.

The findings of this review align with the guideline’s hierarchy of care. While both PRP and CS can provide clinical benefit, their role is supportive rather than foundational. Furthermore, the guidelines highlight the need for individualized decision-making, reflecting the evidence that PRP may be better for patients requiring sustained improvement, whereas CS may be appropriate in scenarios requiring short-term symptom suppression. Importantly, JOSPT guidelines caution against repeated CS injections due to the risk of rupture and atrophy, which reinforces the interpretation of this review that CS should be used sparingly and PRP considered for longer-term management.

4.4 Strengths of the Evidence Base

The evidence base comparing PRP and CS is relatively robust compared to many other musculoskeletal interventions. Several strengths can be highlighted:

1. **Multiple RCTs:** More than 20 RCTs have directly compared PRP and CS in plantar fasciitis, providing higher-level evidence.
2. **Meta-analyses and systematic reviews:** Recent syntheses (Zuo et al., 2025; Herber et al., 2024; Hurley et al., 2020) have pooled results, allowing for more reliable effect estimates.
3. **Consistent patterns:** Across diverse populations and study designs, the overall trend—CS superior short term, PRP superior medium to long term—remains consistent, suggesting generalizability of results.
4. **Validated outcome measures:** Studies commonly use standardized tools (VAS, AOFAS, FFI, FAAM), facilitating comparisons across trials.

This strength of evidence supports a more confident interpretation of clinical utility, particularly compared with other emerging biologic therapies, where evidence is limited.

4.5 Limitations of the Evidence

Despite the relative strength of literature, significant limitations persist that temper conclusions:

1. **Heterogeneity of PRP protocols:** PRP preparation methods vary widely, including single-spin vs double-spin centrifugation, leukocyte-rich vs leukocyte-poor formulations, and differences in activation techniques. This variability affects platelet and growth factor concentrations, potentially influencing outcomes and making comparisons difficult (Chong et al., 2014).
2. **Variability in corticosteroid regimens:** Different corticosteroids (triamcinolone, methylprednisolone, betamethasone) and dosages are used across studies, with or without anesthetic admixture, which may impact efficacy and safety.
3. **Follow-up duration:** While many RCTs report outcomes at 3–6 months, fewer extend beyond 12 months. Long-term durability (>2 years) remains poorly understood.
4. **Sample sizes:** Several RCTs involve relatively small cohorts ($n < 100$), reducing statistical power and increasing the risk of type II error.
5. **Blinding challenges:** The physical differences between PRP and corticosteroid injections (color, viscosity) limit blinding, potentially introducing performance or detection bias.
6. **Outcome variability:** While pain and function are commonly assessed, imaging outcomes are inconsistently reported, and their clinical significance remains unclear.

These limitations highlight the need for standardization in research methodology to strengthen the reliability of comparative findings.

4.6 Future Directions

To refine clinical recommendations and enhance patient outcomes, future research should address the following areas:

1. **Standardization of PRP preparation:** Consensus guidelines on optimal centrifugation methods, platelet concentration, and leukocyte content are needed. This would reduce heterogeneity and improve comparability across trials.
2. **Long-term studies:** RCTs with follow-up periods extending beyond 24 months are essential to determine the durability of PRP benefits and the long-term safety of both treatments.
3. **Cost-effectiveness analyses:** PRP is often more expensive than corticosteroids. Comparative cost-utility studies could clarify whether its longer-term benefits justify higher upfront costs.
4. **Patient stratification:** Future trials should explore predictive factors (e.g., plantar fascia thickness, symptom duration, activity level) to identify which subgroups respond best to PRP or CS. Breton et al.

(2022) provided initial evidence that baseline fascia thickness ≥ 7 mm may predict better CS response, an area warranting further validation.

5. **Combination therapies:** The integration of PRP with structured exercise, shockwave therapy, or orthotic interventions should be explored to assess potential synergistic effects.
6. **Real-world registry data:** Observational registries capturing large patient populations could complement RCTs by providing insights into rare adverse events and long-term functional outcomes.

4.7 Overall Synthesis

The evidence suggests that both CS and PRP have a role in the management of chronic plantar fasciitis, but their utility differs according to treatment goals. CS offers rapid but short-lived analgesia, appropriate in select cases requiring immediate relief. PRP provides slower but more durable improvements, with a stronger safety profile, making it the preferable option for long-term management in chronic sufferers.

These findings should be integrated into a **patient-centered care pathway**, where initial conservative strategies are prioritized, and injections are used selectively based on patient needs, clinical presentation, and risk factors.

5. Conclusion

Plantar fasciitis remains one of the most prevalent causes of heel pain worldwide, imposing a substantial burden on quality of life, athletic participation, and healthcare resources. Although most cases respond to conservative management, a significant proportion of patients develop chronic, recalcitrant symptoms that necessitate more advanced interventions. Corticosteroid (CS) and platelet-rich plasma (PRP) injections have emerged as two of the most widely studied injectable therapies, yet debate has persisted regarding their comparative effectiveness. This review sought to clarify the evidence by synthesizing results from randomized controlled trials, meta-analyses, and guidelines, focusing on pain relief, functional outcomes, imaging parameters, safety, and technique.

The findings demonstrate a clear **temporal distinction** between the two therapies. Corticosteroid injections provide **rapid, short-term analgesia**, making them highly effective within the first month of treatment. Their mechanism, based on potent anti-inflammatory activity, accounts for their quick onset. However, this benefit is transient, and symptom recurrence is common beyond 3 months. By contrast, PRP shows **superior medium- to long-term outcomes**, particularly at 3–6 months, where it consistently outperforms corticosteroids in both pain reduction and functional recovery. Even at 12 months, where results are more variable, PRP maintains a trend toward better functional outcomes, highlighting its regenerative mechanism in addressing the degenerative pathology of plantar fasciitis.

Safety is another crucial differentiator. Corticosteroids, while generally safe when used sparingly, are associated with rare but significant complications, including plantar fascia rupture, fat-pad atrophy, and skin changes. These risks increase with repeated injections, making CS less suitable for chronic management. In contrast, PRP has demonstrated a highly favorable safety profile across all trials, with adverse events largely limited to mild, transient soreness. This positions PRP as a safer long-term option for patients requiring repeated or sustained interventions.

The clinical relevance of these findings lies in **personalized treatment selection**. Corticosteroids may be considered in patients requiring urgent symptom control, for instance, athletes facing competition or individuals with occupational demands requiring rapid mobility. Conversely, PRP is better suited for patients with long-standing, refractory plantar fasciitis who prioritize durable improvement over immediate relief. This patient-centered approach aligns with the 2023 JOSPT Clinical Practice Guidelines, which place injections as adjuncts after failure of conservative strategies, such as stretching, orthoses, and extracorporeal shockwave therapy.

Despite the strength of the evidence base, several **limitations** temper firm conclusions. Heterogeneity in PRP preparation (single vs double spin, leukocyte-rich vs leukocyte-poor), corticosteroid regimens, and injection techniques complicate direct comparison. Many trials involve small sample sizes and limited follow-up durations, with few extending beyond 12 months. These gaps underscore the need for standardized PRP protocols, larger multicenter RCTs, and long-term (>2 years) follow-up data. Additionally, cost-effectiveness analyses are warranted to determine whether the higher upfront expense of PRP is justified by its sustained benefits.

Looking forward, future research should also focus on **predictive markers** to optimize patient selection. Early evidence suggests that baseline plantar fascia thickness may predict stronger CS response, whereas PRP efficacy appears less dependent on imaging characteristics. Incorporating such biomarkers into treatment algorithms could enhance clinical decision-making and improve outcomes. Moreover, exploring combination therapies—such as PRP with exercise programs or shockwave therapy may unlock synergistic benefits.

In conclusion, this comparative review reinforces that both CS and PRP have legitimate roles in the management of chronic plantar fasciitis, but their utility differs fundamentally. **Corticosteroids remain the agent of choice for short-term pain relief**, especially when rapid return to function is paramount. **Platelet-rich plasma, however, offers superior medium- to long-term improvements in pain, function, and safety**, making it the more sustainable option for chronic cases. Clinicians should therefore adopt an individualized, stepwise approach, integrating patient goals, chronicity of symptoms, and risk profiles into the decision-making process. By aligning treatment choice with patient needs, healthcare providers can optimize outcomes, minimize complications, and move closer to resolving the persistent clinical challenge of chronic plantar fasciitis.

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