

General

Platelet-Rich Plasma for Facet Joint Pain: A Promising Therapeutic Role

Jamal Hasoon, Ivan Urits, Christopher L Robinson

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Platelet-rich plasma (PRP) offers a potential long term, corticosteroid-free, therapy for selected patients with facet-mediated spinal pain. This narrative review examines lumbar and cervical clinical studies and provides an expert perspective. Several comparative studies report pain and functional improvement, with some suggesting sustained lumbar benefit beyond that of corticosteroids. Cervical studies also show encouraging outcomes. However, recent randomized trials have not consistently demonstrated superiority, and preparation variability complicates interpretation. PRP merits continued clinical investigation and individualized consideration, with transparent counseling, image-guided delivery, and standardized outcome assessment. Symptomatic improvement should not be equated with proven joint regeneration.

INTRODUCTION AND SCOPE

Facet osteoarthritis affects the entire synovial joint, including cartilage, capsule, and subchondral structures, providing a rationale for locally directed treatment.¹ Therapeutic corticosteroid facet injections have been used for targeted therapeutic relief as an alternative to medial branch blocks and radiofrequency neurotomy.² There are some patients who prefer an alternative treatment to neurotomy or repetitive steroid exposure.

This focused narrative review uses PubMed-indexed clinical and mechanistic literature. It examines Platelet-rich plasma (PRP) delivered to facet joints, distinguishing direct intra-articular evidence from other spinal injection targets. An expert position is provided at the end of the paper along with the conclusion.

BIOLOGICAL RATIONALE

PRP concentrates autologous platelets and associated growth factors and cytokines. These mediators may influence inflammation, cellular signaling, and tissue repair.³ This rationale is particularly attractive when synovitis or capsular injury contributes to pain, and when a patient wishes to avoid repeated corticosteroid exposure.

Yuan et al. discuss regenerative and antimicrobial properties of platelet- and marrow-derived biologics, including immune modulation and platelet-associated antimicrobial activity.⁴ These mechanisms broaden the scientific rationale but do not demonstrate that facet PRP restores cartilage or prevents procedural infection. Strict asepsis remains essential. The defensible clinical goal is improved pain and function; structural regeneration remains an unproven facet-specific claim.

LUMBAR EVIDENCE: ENCOURAGING COMPARATIVE RESULTS

An early prospective study by Wu et al. treated 19 patients with fluoroscopic intra-articular PRP and reported improved pain and disability through three months, without severe procedure-related complications.⁵ Its uncontrolled design established feasibility rather than efficacy.

A subsequent randomized study of 46 patients compared PRP with local anesthetic/corticosteroid. Both groups improved, while PRP outcomes became more favorable over six months as comparator benefits diminished.⁶ These findings suggest a potentially useful duration of response and longer-term durability, although the small sample and absence of placebo control limit certainty.

Kotb et al. randomized 30 patients with lumbar facet disease to PRP or corticosteroid. Both groups improved clinically at three months, while PRP produced greater improvement in MRI-detected synovitis grades.⁷ Reduced synovitis provides a potentially relevant biological signal, but is not evidence of cartilage regeneration. However, reduced synovitis suggests PRP may provide a better long term therapeutic option for patients.

Cauchon et al. conducted a triple-blinded multicenter trial involving 50 patients selected through two positive intra-articular diagnostic blocks. At six months, PRP favored clinically meaningful disability improvement, pain-responder proportions, and mean disability scores over corticosteroid injections.⁸ This study again provides important support for PRP in a carefully characterized lumbar population.

Sundar et al. reported two patients with post-traumatic lumbar pain who preferred PRP over corticosteroid injections, diagnostic medial branch blocks, and radiofrequency

ablation. They reported approximately 60% and 70% relief at six weeks, respectively, without reported complications.⁹ These cases illustrate patient preference and potential benefit after trauma, while their short follow-up and lack of confirmatory blocks limit diagnostic certainty and generalizability.

RECONCILING MIXED TRIAL FINDINGS

Positive findings must be considered alongside newer negative studies. Geoffroy et al. randomized 76 patients to PRP or corticosteroid and found no superiority for the primary six-month pain outcome; only six PRP recipients and five corticosteroid recipients achieved at least 50% improvement.¹⁰ Santos et al. likewise found no superiority of PRP for pain or functional outcomes through three months in a 59-patient trial.¹¹

These results argue against presenting PRP as consistently superior to corticosteroids. Differences in patient selection, preparation, injection protocols, and follow-up may contribute to inconsistent results, but have not been established as explanations.

Overall, PRP appears to have credible signals of benefit requiring better definition of responders, rather than established efficacy for all facet pain.

CERVICAL EVIDENCE

In a prospective series of 44 patients with chronic whiplash-associated disorders, Smith et al. reported clinically meaningful pain and disability improvement after cervical facet PRP; 41% reported greater than 50% pain relief at three months.¹² Longer-term reporting from the same cohort found that 37% reported greater than 50% relief at twelve months.¹³ These publications are not independent cohorts. Repeat PRP injections, adjunct physiotherapy, and incomplete follow-up complicate attribution.

Allison et al. randomized 40 patients with cervical facetogenic pain to PRP or corticosteroid. Both groups improved in pain at one month and disability at three and six months, without a significant difference in pain trajectories. PRP favored early pain self-efficacy and caused less procedural pain.¹⁴ The results support continued investigation of a corticosteroid-free option, but neither establish superiority nor prove equivalence.

CLINICAL IMPLEMENTATION AND RESEARCH PRIORITIES

A 2025 systematic review described therapeutic promise while acknowledging low to moderate certainty in the overall facet biologics literature.¹⁵ Its conclusions should be interpreted alongside subsequently published trials. PRP is

best considered for persistent, function-limiting pain with a plausible facet source after appropriate conservative treatment. Imaging and examination inform selection but do not independently establish facet-mediated pain; diagnostic blocks may improve characterization, although their ability to predict PRP response remains uncertain.

PRP is not a uniform product. Platelet dose, leukocyte content, activation, injectate volume, and preparation methods should be documented. A lumbar PRP review highlights these reporting gaps and the need for standardization.¹⁶ Image guidance, sterile preparation, and careful assessment of infection and bleeding risks are essential. Small studies cannot establish the frequency of rare complications, especially in the cervical region.

Follow-up should assess pain, disability, activity goals, medication use, and durability. The optimal formulation, dose, and repeat-treatment schedule remain unresolved. Larger sham-controlled studies and comparisons with radiofrequency ablation should establish comparative effectiveness and cost-effectiveness.

EXPERT OPINION AND CONCLUSION

PRP offers an appealing joint-directed approach that avoids corticosteroid exposure and nerve ablation. Selected lumbar trials and early cervical studies provide encouragement to justify further research and carefully counseled clinical consideration. PRP may be particularly appealing to patients who wish to avoid radiofrequency neurotomy or repeated corticosteroid exposure, provided the clinical indication and individualized benefit-risk assessment support its use. Patients should understand the uncertainty, potential costs, alternatives, and absence of proven structural regeneration.

PRP should complement rehabilitation, with continuation based on meaningful benefit rather than predetermined injection series. Standardized preparation and rigorous comparative trials can clarify its role while preserving access to a promising therapeutic option.

DISCLOSURES

Generative AI assisted with organization and language editing. The manuscript concept originated with the authors and verified the cited sources. All authors contributed with writing, editing, and approving the final paper.

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REFERENCES

1. Gellhorn AC, Katz JN, Suri P. Osteoarthritis of the spine: the facet joints. *Nat Rev Rheumatol*. 2013;9(4):216-224. doi:[10.1038/nrrheum.2012.199](https://doi.org/10.1038/nrrheum.2012.199). PMID:23147891
2. Hasoon J, Mahmood S, Nguyen A, Govindaraj R, Robinson CL. Revisiting Therapeutic Facet Joint Injections for Chronic Spinal Pain: A Case Series. *Orthop Rev (Pavia)*. 2024;16:124771. doi:[10.52965/001c.124771](https://doi.org/10.52965/001c.124771). PMID:39624471
3. Grossen AA, Lee BJ, Shi HH, Shakir HJ, Cornett EM, Kaye AD. Platelet-Rich Plasma Injections: Pharmacological and Clinical Considerations in Pain Management. *Curr Pain Headache Rep*. 2022;26(10):741-749. doi:[10.1007/s11916-022-01082-2](https://doi.org/10.1007/s11916-022-01082-2). PMID:36087238
4. Yuan C, Ang SP, Hasoon JJ, et al. Dual-Action Regenerative Therapies: Regeneration and Antimicrobial Effects of Platelet- and Marrow-Derived Biologics. *Biomedicines*. 2025;13(11):2832. doi:[10.3390/biomedicines13112832](https://doi.org/10.3390/biomedicines13112832). PMID:41301922
5. Wu J, Du Z, Lv Y, et al. A New Technique for the Treatment of Lumbar Facet Joint Syndrome Using Intra-articular Injection with Autologous Platelet Rich Plasma. *Pain Physician*. 2016;19(8):617-625. doi:[10.36076/ppj/2016.19.617](https://doi.org/10.36076/ppj/2016.19.617). PMID:27906940
6. Wu J, Zhou J, Liu C, et al. A Prospective Study Comparing Platelet-Rich Plasma and Local Anesthetic (LA)/Corticosteroid in Intra-Articular Injection for the Treatment of Lumbar Facet Joint Syndrome. *Pain Pract*. 2017;17(7):914-924. doi:[10.1111/papr.12544](https://doi.org/10.1111/papr.12544). PMID:27989008
7. Kotb SY, Sherif NM, Saleh HA, Ahmed SF, Sakr HM, Taeimah MO. The role of intra-articular injection of autologous platelet-rich plasma versus corticosteroids in the treatment of synovitis in lumbar facet joint disease. *Saudi Med J*. 2022;43(11):1200-1208. doi:[10.15537/smj.2022.43.11.20220449](https://doi.org/10.15537/smj.2022.43.11.20220449). PMID:36379530
8. Cauchon AM, Mares C, Fan XY, et al. Comparing the efficacy of intra-articular injection of Platelet Rich Plasma (PRP) with corticosteroids (CS) in patients with chronic zygapophyseal joint low back pain confirmed by double intra-articular diagnostic blocks: A triple-blinded randomized multicentric controlled trial with a 6-month follow-up. *Interv Pain Med*. 2024;3(4):100525. doi:[10.1016/j.inpm.2024.100525](https://doi.org/10.1016/j.inpm.2024.100525). PMID:39717452
9. Sundar P, Urits I, Viswanath O, Robinson CL, Kaye AD, Hasoon J. Platelet-Rich Plasma Facet Joint Injections for Post-Traumatic Lumbar Facet-Mediated Pain: A Two-Patient Case Report. *Orthop Rev (Pavia)*. 2026;18:166432. doi:[10.52965/001c.166432](https://doi.org/10.52965/001c.166432). PMID:42592353
10. Geoffroy M, Beissat M, Kanagaratnam L, Ackah Miezian S, Salmon JH. Platelet-rich plasma versus corticosteroids in facet joint syndrome: A controlled, randomized, double-blind study. *Joint Bone Spine*. 2026;93(3):106001. doi:[10.1016/j.jbspin.2025.106001](https://doi.org/10.1016/j.jbspin.2025.106001). PMID:41183587
11. Santos WZ, Yamaguchi RSS, Machado ES, de Mendonça RGM, Gotfryd A, Meves R. PRP INFILTRATION VERSUS CORTICOSTEROIDS: A PRELIMINARY RANDOMIZED CLINICAL TRIAL. *Acta Ortop Bras*. 2026;34(4):e295387. doi:[10.1590/1413-785220263404e295387](https://doi.org/10.1590/1413-785220263404e295387). PMID:42491965
12. Smith A, Andruski B, Deng G, Burnham R. Cervical facet joint platelet-rich plasma in people with chronic whiplash-associated disorders: A prospective case series of short-term outcomes. *Interv Pain Med*. 2022;1(2):100078. doi:[10.1016/j.inpm.2022.100078](https://doi.org/10.1016/j.inpm.2022.100078). PMID:39239374
13. Smith A, Andruski B, Deng G, Burnham R. Cervical facet joint platelet-rich plasma in people with chronic whiplash-associated disorders: A prospective case series of longer term 6- and 12-month outcomes. *Interv Pain Med*. 2023;2(1):100237. doi:[10.1016/j.inpm.2023.100237](https://doi.org/10.1016/j.inpm.2023.100237). PMID:39239611
14. Allison DJ, Ebrahimzadeh S, Muise S, et al. Intra-articular corticosteroid injections versus platelet-rich plasma as a treatment for cervical facetogenic pain: a randomized clinical trial. *Reg Anesth Pain Med*. 2026;51(1):33-40. doi:[10.1136/rapm-2024-105889](https://doi.org/10.1136/rapm-2024-105889). PMID:39542641
15. Manchikanti L, Abd-Elsayed A, Kaye AD, et al. A Systematic Review of Regenerative Medicine Therapies for Axial Spine Pain of Facet Joint Origin. *Curr Pain Headache Rep*. 2025;29(1):61. doi:[10.1007/s11916-025-01376-1](https://doi.org/10.1007/s11916-025-01376-1). PMID:40085275
16. Yum JI, De Luigi AJ, Umphrey GL, Ganter BK, Yoo M. Platelet-Rich Plasma Treatment for the Lumbar Spine: A Review and Discussion of Existing Gaps. *Pain Physician*. 2024;27(5):283-302. doi:[10.36076/ppj.2024.7.283](https://doi.org/10.36076/ppj.2024.7.283). PMID:39087964