

# The efficacy of platelet-rich plasma in the treatment of knee joint arthritis: A study on 63 patients

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Received: 12-02-2024

Accepted: 28-02-2024

## How to cite this article:

Godara N, Hussain I, Garg P. The efficacy of platelet-rich plasma in the treatment of knee joint arthritis: A study on 63 patients. *Int J Adv Integ Med Sci* 2024;6(1):7-8.

Source of Support: Nil,

Conflicts of Interest: None declared.

## INTRODUCTION

Knee osteoarthritis (OA) is one of the most common causes of disability in the elderly. It is characterized by the breakdown of cartilage, leading to pain, swelling, and reduced mobility. Traditional treatments range from non-pharmacological approaches such as physical therapy to pharmacological interventions, including non-steroidal anti-inflammatory drugs (NSAIDs) and corticosteroids, to surgical procedures such as total knee arthroplasty. However, these treatments often provide limited relief and may come with significant side effects.

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Knee osteoarthritis (OA) is a prevalent degenerative joint disease that significantly impairs quality of life, especially in older adults. Traditional treatments, including physical therapy, medications, and surgery, have varying degrees of success. Recently, platelet-rich plasma (PRP) therapy has emerged as a promising option for managing knee OA. This study evaluates the effectiveness of PRP injections in 63 patients with knee OA. Results indicate that PRP is a safe and effective treatment option, leading to improved pain management, function, and overall patient satisfaction.

**KEY WORDS:** Platelet rich plasma, knee, arthritis

Platelet-rich plasma (PRP) therapy has gained attention as a minimally invasive treatment option for knee OA.<sup>[1]</sup> PRP involves concentrating platelets from the patient's blood and injecting them into the affected joint. The growth factors released by platelets are believed to promote tissue repair and reduce inflammation.<sup>[2]</sup> This study investigates the efficacy of PRP in a cohort of 63 patients with knee OA.

## METHODS

### Study Design

This is a prospective study involving 63 patients diagnosed with OA (grades II-IV based on the Kellgren–Lawrence scale).

### Participants

The study included 63 patients (aged 45–75) with symptomatic knee OA who had not responded to conservative treatments. Exclusion criteria included patients with coagulopathies, infections, or prior knee surgeries within the last year.

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## PRP Preparation and Administration

PRP was prepared using a two-step centrifugation process. Approximately 30–60 mL of the patient's blood was drawn, and platelets were concentrated to obtain 3–5 mL of PRP. The PRP was then injected into the affected knee joint under ultrasound guidance.

## Outcome Measures

The primary outcome measure was pain reduction, assessed using the visual analog scale (VAS) and Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) at baseline, 3 months, and 6 months post-injection. Secondary outcomes included improvements in knee function and patient satisfaction, which evaluated through patient questionnaires.

## RESULTS

### Pain Reduction

Significant reduction in pain was observed at both 3 months and 6 months post-injection, with VAS scores decreasing from a mean of 7.5 at baseline to 3.2 at 6 months ( $P < 0.001$ ).

### Functional Improvement

WOMAC scores showed marked improvement, with the mean score decreasing from 68.5 at baseline to 35.4 at 6 months ( $P < 0.001$ ).

### Patient Satisfaction

About 80% of patients reported being satisfied with the treatment, with many experiencing increased mobility and decreased reliance on analgesics.

### Safety

No significant adverse events were reported. Mild transient pain at the injection site was the most common side effect, reported by 15% of patients.

## DISCUSSION

The results of this study suggest that PRP is a viable treatment option for OA, particularly in patients who have not responded to traditional therapies.<sup>[3]</sup> The significant improvements in

pain and function observed in this cohort align with previous studies, supporting the regenerative potential of PRP in joint preservation.<sup>[4]</sup>

The safety profile of PRP is also favorable, with no serious adverse events reported. This is particularly important given the risks associated with long-term use of NSAIDs and corticosteroids. However, the study's limitations, including the lack of a control group and the relatively short follow-up period, warrant further research to confirm these findings and establish long-term efficacy.

## CONCLUSION

This paper provides an overview and analysis of the use of PRP in treating knee joint arthritis in 63 patients, offering insight into its efficacy and safety.

PRP therapy appears to be an effective and safe treatment for OA, offering significant pain relief and functional improvement in patients. As a minimally invasive option, PRP provides a promising alternative to more aggressive interventions such as surgery. Further studies with larger sample sizes and longer follow-up periods are needed to fully elucidate the benefits and mechanisms of PRP in knee OA treatment.

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