

Introduction

Knee osteoarthritis is one of the most common causes of persistent knee pain and reduced mobility in older individuals. Amongst the conservative measures intra-articular injections within knee joint provide much relief. Intra-articular injections—including corticosteroids, platelet rich plasma (PRP) and hyaluronic acid (HA), are frequently used in clinical practice.

Aim:

To assess and compare the extent and duration of symptom relief provided by intra-articular corticosteroid, PRP, and HA injections in patients with primary knee osteoarthritis.

Methods:

A prospective randomized study was carried out at Government Medical College, Amritsar, between January 2021 and December 2022, enrolling ninety patients diagnosed with Kellgren–Lawrence Grade II–III osteoarthritis. Participants were randomly allocated into three groups of thirty:

Group A: single intra-articular triamcinolone (40 mg),

Group B: single leukocyte-poor PRP injection,

Group C: Single injection of Hyaluronic acid (90mg/3ml)

Clinical progress was monitored using the Visual Analogue Scale (VAS) and the WOMAC score at baseline and again at 1, 3, and 6 months. Statistical comparisons employed paired t-tests and ANOVA, with significance set at $p < 0.05$.

Results:

All three groups experienced meaningful pain relief by the first month of follow-up. Corticosteroids provided the quickest response, although their effect tapered off by 3 to 6 months. HA produced a moderate but steady improvement, lasting up to the 3-month mark. PRP showed the most durable results, with VAS decreasing from 7.3 ± 1.0 to 3.0 ± 0.8 and WOMAC falling from 67 ± 8 to 36 ± 6 at 6 months ($p < 0.001$). No significant complications were observed in any group.

Conclusion:

Although corticosteroid, HA, and PRP injections all offer short-term symptomatic benefit in knee osteoarthritis, PRP stands out for delivering longer-lasting pain relief and better functional recovery. Based on the outcomes from this study population at GMC Amritsar, PRP appears to be a reliable and effective biological option for managing moderate knee OA in everyday orthopedic practice.