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Scientific Abstracts &gt; Chronic Pain

# A 5 Year Retrospective Outcomes Review of Intraarticular Hyaluronic Acid Versus Steroids in Patients with Knee Osteoarthritis

Maria Cecilia Guerrero, Shiva Nuti, Anusha Pasupuleti, Puja Shah, Roshan Santhosh  
Department of Physical Medicine & Rehabilitation, Larkin Community Hospital

## Introduction

Knee Osteoarthritis (KOA) is a degenerative joint disease characterized by cartilage breakdown, causing pain, swelling, and functional impairment. [1] Conservative management typically involves a combination of weight loss, physical therapy, assistive devices, and pain medications. [1] Intra-articular steroid or hyaluronic acid (HA) injections are often used for relief, but their comparative efficacy remains inconclusive. A recent study suggested that steroid injections offer short-term pain relief, while HA provides longer-lasting effects. [2] Conversely, there is some evidence which suggests that while steroid injections may offer short-term pain relief, they may increase OA progression risk. [3] Another study showed both injections offer short-term relief without delaying Total Knee Arthroplasty (TKA). [4] This study aims to compare steroid and HA injections in managing KOA symptoms and delaying TKA.

## Materials and Methods

We used the TriNetX Database, containing de-identified healthcare data from over 90 million US patients, to select patients with KOA diagnoses and interventions as per ICD & CPT codes. This database of de-identified patient information is exempt from IRB review as determined by the University of Texas Medical Branch IRB. We conducted a propensity score-matched case-control study of five year outcomes in KOA patients who received HA versus steroid intra-articular injections within a 5-year window. Cohorts were matched for age, race, gender, obesity, and comorbid conditions (Table 1). Primary outcomes included TKA incidence, with secondary outcomes of knee arthroscopy, further knee injections, falls, and opioid use.

## Results/Case Report

Data search yielded 59,668 patients in each cohort post propensity score matching. The mean age for the HA cohort was  $63.9 \pm 12.2$  at index and  $64.2 \pm 12.1$  in the steroid cohort. Average length of follow-up following injection was  $1,170 \pm 672.8$  days in the HA cohort compared to  $1,188 \pm 668.2$  days in the steroid cohort. Analysis yielded a statistically significant ( $p < .05$ ) increased utilization of TKA in the HA cohort (RR 1.479). Additionally there were modest decreases in knee arthroscopy (RRR 16.6%), falls (RRR 5.5%), and opioid utilization (RRR 8.7%) in the HA cohort. A detailed analysis of each outcome variable can be found in Table 2.

## Discussion

Our analysis indicates that HA injections are associated with an increased rate of TKA, suggesting that HA may be less effective in delaying KOA progression. While the HA cohort had decreased knee arthroscopy, falls, and opioid utilization ( $p < .05$ ); these modest improvements are unlikely to yield clinically significant reductions in harms. Future randomized control trials are necessary to further elucidate the comparative effectiveness of HA vs corticosteroid injections. Additionally, analyzing longitudinal outcomes in a national database could clarify the impact of different injection modalities on TKA utilization, as indicated by our findings

## References

1. Brophy RH, Fillingham YA. AAOS Clinical Practice Guideline Summary: Management of Osteoarthritis of the Knee (Nonarthroplasty), Third Edition. *Journal of the American Academy of Orthopaedic Surgeons*. 2022;30(9):e721-e729. doi:<https://doi.org/10.5435/jaaos-d-21-01233>
2. Liu SH, Dubé C, Eaton CB, Driban JB, McAlindon TE, Lapane KL. Long Term Effectiveness of Intra Articular Injections on Patient-reported Symptoms in Knee Osteoarthritis. *J Rheumatol*. 2018;45(9):1316-1324. doi:10.3899/JRHEUM.171385.
3. Nikam M, Patil PV, Kumar P. Effectiveness of intra-articular hyaluronic acid versus corticosteroids in knee osteoarthritis: a comparative study. *Int J Res Orthop*. 2022;8(1):25-32. doi:10.18203/issn.2455-4510.intjresorthop20220607.
4. Vaquero-Picado A, Rodríguez-Merchán EC. Intra-articular Injections of Corticosteroids and Hyaluronic Acid in Knee Osteoarthritis. In: *Comprehensive Guide to Arthroplasty*. Springer; 2020:45-59. doi:10.1007/978-3-030-44492-1\_3.

## Disclosures

No

## Tables / Images

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