



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



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TriNetX



Health

INTRO

- Knee Osteoarthritis (KOA) is a degenerative joint disease that causes functional impairment.
- Intra-articular steroid or hyaluronic acid (HA) injections are often used for pain relief, but their comparative efficacy remains inconclusive.

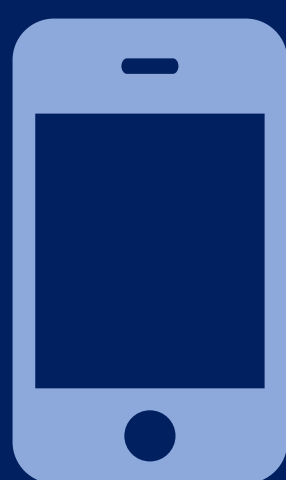
METHODS

- Propensity score matched case-control study using TriNetX, a federated open-source database housing de-identified patient data.
- Query: Five-year outcomes in KOA patients receiving hyaluronic acid (HA) or steroid intra-articular injections
- Cohorts had 59,668 patients each after propensity score matching for age, race, gender, obesity, and comorbidities.
- Primary outcomes included incidence of Total Knee Arthroplasty (TKA) after steroid vs HA injections
- Secondary outcomes investigated rates of knee arthroscopy, further injections, falls, and opioid use after the injections.

RESULTS

Outcome Variable	KOA + HA	KOA + Steroid	p-value
Risk of Total Knee Arthroplasty	0.1665	0.1126	< 0.0001
Risk of Opioids	0.5078	0.5559	< 0.0001
Risk of Knee Arthroscopy	0.037	0.0446	< 0.0001
Risk of Falls	0.1134	0.1201	0.0003
Mean Opioid Prescriptions	6.974	7.523	< 0.0001
Knee Injection	0.9409	0.6116	0

Steroid injections were associated with a 32.4% relative risk reduction in 5 year rates of total knee arthroplasty when compared to viscosupplementation



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Characteristic	HA % of Cohort (After Matching)	Steroid % of Cohort (After Matching)
Female	55.88%	56.25%
Male	30.15%	29.94%
White	63.15%	64.15%
Black or African American	9.34%	9.06%
Hispanic or Latino	4.42%	3.96%
Asian	1.28%	1.19%
Not Hispanic or Latino	63.46%	63.50%
Hypertension	51.23%	51.29%
Other Chronic Pain	35.37%	35.43%
Overweight and Obesity	30.89%	30.07%
Diabetes Mellitus	20.67%	20.17%
Anxiety Disorder	17.20%	16.74%
Coronary Artery Disease	12.12%	11.58%
Depression	8.08%	8.05%
History of Coronary Angioplasty	1.97%	1.90%
Rheumatoid Arthritis	0.91%	0.65%
Ankylosing Spondylitis	0.28%	0.18%
History of TKA	1.65%	1.40%

Discussion

- HA injections are linked to a higher rate of total knee arthroplasty (TKA), suggesting they may be less effective in slowing knee osteoarthritis (KOA) progression.
- Further randomized controlled trials and longitudinal studies are needed to clarify the comparative outcomes of HA versus corticosteroid injections