

# SEQUENTIAL INTRARTICULAR CORTICOSTEROID AND HYALURONIC ACID PROVIDES SIGNIFICANT KNEE OSTEOARTHRITIS SYMPTOM IMPROVEMENT

Bret Andrew BS<sup>1</sup>, Dr. Tim Robinson PhD<sup>1,2</sup>, Joseph McGinley MD, PhD<sup>1,3</sup>

1. University Washington School of Medicine  
2. University of Wyoming  
3. The McGinley Clinic



UW Medicine

UW SCHOOL  
OF MEDICINE



## BACKGROUND

Pain related to knee osteoarthritis (OA) is a common and growing presentation to medical facilities. Intraarticular hyaluronic acid (HA) injections along with intraarticular corticosteroid injections represents a minimally invasive and cost-effective treatment option. In rare cases, the use of hyaluronic acid has resulted in pseudosepsis. Our study evaluated the efficacy of combined corticosteroid and HA injection in treatment of pain associated with knee OA. In addition, we hypothesize that corticosteroid preceding HA injections can reduce the incidence of pseudosepsis.

## METHODS

### 1. Data Retrieval

- A retrospective chart review was conducted to identify patients with pain related to knee OA who received one of two treatments between the years 2010-2020:
  - Group 1: Corticosteroid and HA**
  - Group 2: Corticosteroid alone**

### 2. Procedure:

- Corticosteroid was injected into the knee joint under sonographic guidance. For group 1, HA injection followed 10 ± 8 days joint under sonographic guidance

### 3. Tracking Pain

- 0-10 patient self-reported pain scale was used as the primary outcome

### 4. Analysis

- A repeated measures mixed effects model was used to fit the percent pain reduction values
- Secondary outcomes included adverse events (pseudo sepsis) and additional treatments
- Pain scores were collected prior to treatment and at 1 month, 3 months, 6 months, and 12 months post-treatment

## RESULTS

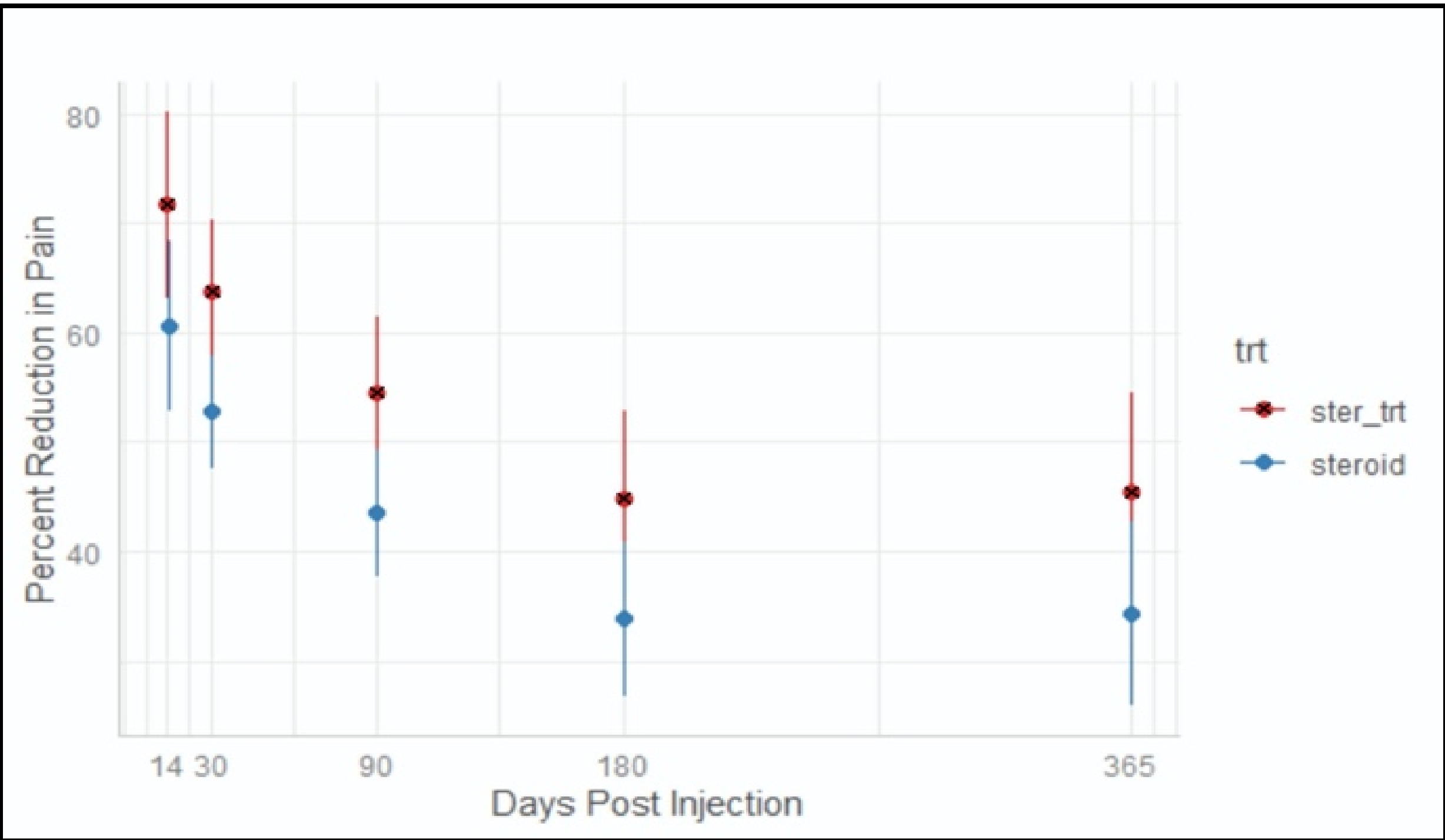


Figure One: Percent reduction in pain at all recorded time points for Group 1 (ster\_trt) and Group 2 (steroid).

Treatment	Days Post Injection	Number of Individuals	Percent of Patients Experiencing Pain Reduction
Steroid + HA	14	49	93.87%
	30	135	92.59%
	90	105	85.7%
	180	58	82.75%
	365	32	90.62%
Steroid Only	14	59	76.2%
	30	245	75.9%
	90	148	81.08%
	180	78	82.05%
	365	46	89.13%

Table One: Percent of patients experiencing any reduction in pain from baseline score in Group 1 and Group 2.

## DISCUSSION

- Both treatments resulted in pain reduction at all time points with group 1 demonstrating greater percent reduction compared to group 2
- Preemptive steroid injection proved successful in eliminating pseudosepsis, as no adverse events were reported
- Given the expensive and invasive nature of knee replacement surgery, intraarticular injections can be a cost effective and safe alternative in the treatment of knee OA
- Limitations:
  - Patient reporting consistency over the course of a year and a relatively small sample size from one clinic
  - Confounding variables could lie in the range of ages among subjects

## CONCLUSIONS

Combined intraarticular corticosteroid and HA injections demonstrated improvement in pain reduction compared to corticosteroid alone up to one year post treatment with no reported cases of pseudo sepsis. Based on our study, combined corticosteroid and HA injection represents a safe and effective treatment option in patients suffering from knee OA pain.

## REFERENCES



SCAN ME