

Lambert RGW, Hutchings EJ, et al. Steroid Injection for Osteoarthritis of the Hip. A Randomized, Double-Blind, Placebo-Controlled Trial. Arthritis Rheum 2007;56(7):2276-2287.

Design: randomized clinical trial

Purpose of study: to assess the efficacy of a fluoroscopically guided steroid injection for osteoarthritis (OA) of the hip

Population/sample size/setting:

- 52 patients (31 women, 21 men, mean age 62) treated for osteoarthritis of the hip at the University of Alberta
- Eligibility criteria were a diagnosis of primary OA of the hip according to ACR criteria, including radiologic evidence of OA, age over 40, at least 6 months of symptoms, persistent pain despite receiving the maximal tolerated doses of acetaminophen and/or an NSAID, persistent pain of at least 40 mm on a 100 point scale on the 5 pain scales of the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), daily pain during the month prior to study entry, stable NSAID dose for 2 weeks prior to enrollment, and ability to attend followup appointments
 - o The 5 pain questions of the WOMAC are for pain on walking, stair climbing, nocturnal, at rest, and with weight-bearing
- Exclusion criteria were secondary causes of OA, local or systemic infection, diabetes, systemic arthritis, allergy to injected anesthetic or contrast, previous steroid injection in the hip, coagulopathy, and avascular necrosis of bone

Interventions:

- Randomization was to one of two injections under fluoroscopic guidance done by a fellowship-trained musculoskeletal radiologist: anesthetic plus steroid (n=31) or anesthetic alone (n=21)
 - o Steroid group received 10 mg bupivacaine and 40 mg triamcinolone
 - o Control group received 10 mg bupivacaine and 2 ml normal saline
- After the injections, patients were instructed to observe 3 days of bed rest followed by activity restriction for one week when they were asked to refrain from activity or work
- Patients were required to bring medications to each visit and not to change any medication without first informing the research nurse

Outcomes:

- Followup evaluations were done at 1, 2, 3, and 6 months postinjection
- Primary outcome was set at 2 months postinjection and was defined as either having or not having a 20% decrease in the summed WOMAC pain scales (WOMAC20) a “responder” had at least a 20% decrease and a “nonresponder” did not have that decrease
 - o One secondary outcome was also derived from the WOMAC pain scales, but was defined as having or not having a 50% decrease in summed pain scores (WOMAC50)
- Other secondary outcomes were derived from WOMAC function and from quality of life scales
- At 2 months, 31 patients in the steroid group had WOMAC20 scores available, and 21 were responders while 10 were nonresponders
 - o At 2 months, 18 patients in the control group had WOMAC20 scores, and there were 5 responders and 13 nonresponders
- After the 2 month evaluation of the primary endpoint, 10 patients in the control group crossed over and received an open label steroid injection
 - o After the 2 month evaluation, there were also 7 patients in the steroid group who chose to have an open label injection of steroid
 - o The majority of patients who chose an open label steroid injection became WOMAC20 responders one month after the open label injection
- At 6 months, there were additional withdrawals from the study as patients who had open label injection of steroid and who had hip arthroplasties were removed from the analysis along with those who were simply lost to followup for unrelated reasons
 - o At the 6 month point, only 16 patients remained in the steroid group, of whom 6 were defined as responders and 10 as non-responders
 - o At the same time point, only 3 patients were still in the control group, of whom 1 was a responder and 2 were nonresponders
- Treatment was well-tolerated, and no withdrawals occurred because of adverse effects

Authors’ conclusions:

- In patients receiving an intraarticular injection of local anesthetic plus steroid into the hip, a more favorable outcome was seen than in patients who received local anesthetic alone, with significant gains from baseline to 2 months in pain, stiffness, and function
- There are potential technical difficulties in injecting a diseased hip joint, and there can be variation in patient response related to the degree of difficulty in the injection
- Steroids may be beneficial in protecting against cartilage fibrillation and osteophyte formatio, but the metabolic pathways have not been fully elucidated
- Weight-bearing joints should not be injected more than 4 times per year
- Steroid injection of the hip with OA can confer improvement lasting up to 3 months

Comments:

- The clinical course of the patients is difficult to follow in some places, because the distribution of the responders in Figure 2 is poorly described in the text, particularly with respect to whether pain returned between 2 and 6 months
- A large number of outcomes were described, but the primary outcome at 2 months shows a short term benefit from steroid injection
- The metabolic benefits of steroids on cartilage must be regarded as very uncertain, since some in vitro experiments (Farkas et al 2010)appear to show that steroids can cause apoptosis of chondrocytes
- This effect may not be consequential if steroid injection is being done in a setting in which there is a waiting list for hip arthroplasty; the study was done in Canada, where the issue of waiting time may be especially pertinent for advance hip OA

Assessment: adequate for some evidence that a fluoroscopically guided injection of triamcinolone into an osteoarthritic hip relieves pain and improves function for up to three months

Reference :

Farkas B, Kvell K, et al. Increased Chondrocyte Death after Steroid and Local Anesthetic Combination. Clin Orthop Relat Res 2010; 468:3112–3120.