

A fluoroscopic-guided intraarticular corticosteroid injection improved pain in osteoarthritis of the hip

Lambert RG, Hutchings EJ, Grace MG, et al. Steroid injection for osteoarthritis of the hip: A randomized, double-blind, placebo-controlled trial. *Arthritis Rheum.* 2007;56:2278-87.

Clinical impact ratings: GIM/FP/GP ★★★★★☆☆ Rheumatology ★★★★★☆☆

QUESTION

In patients with osteoarthritis (OA) of the hip, does a fluoroscopic-guided intraarticular corticosteroid (IAC) injection relieve pain?

METHODS

Design: Randomized placebo-controlled trial.

Allocation: {Concealed}†.*

Blinding: Blinded (clinicians, patients, {data collectors, outcome assessors, data analysts, data safety and monitoring committee, and manuscript writers}†).*

Follow-up period: 2 months.

Setting: Alberta, Canada.

Patients: 52 patients > 40 years of age (mean age 62 y, 60% women) with symptomatic hip OA for > 6 months before the trial, persistent pain despite taking maximum tolerated doses of conventional drugs, daily pain in the month before the trial, and stable doses of nonsteroidal antiinflammatory drugs for 2 weeks before the trial. Exclusion criteria were secondary causes of OA, diabetes, systemic arthritis, local or systemic infection precluding injection, allergy to contrast material or anesthetic agents, coagulopathy, anticoagulant therapy, previous IAC injection in the index hip, and avascular necrosis of bone.

Intervention: Fluoroscopic-guided IAC injection of either bipivucaine, 10 mg, and triamcinolone hexacetonide, 40 mg (IAC) ($n = 31$), or bipivucaine, 10 mg, and saline, 2 mL (placebo) ($n = 21$).

Outcomes: 20% improvement in the Western Ontario and McMaster Universities OA

Index (WOMAC) pain score (five 100-mm visual analog scales [VASs]; 0 = no pain, 100 = worst pain). Secondary outcomes included 50% improvement in WOMAC pain score, WOMAC stiffness and physical function scores, patient global assessment of health (100-mm VAS, higher score indicates more severe disease), and SF-36 quality of life.

Patient follow-up: 94% (intention-to-treat analysis).

MAIN RESULTS

At 2 months, more patients in the IAC group had 20% and 50% improvement in WOMAC pain score than in the placebo group (Table). The IAC group had greater improvement in WOMAC stiffness and physical function scores (Table), patient global assessment of health (Table), and

SF-36 quality-of-life scores than did the placebo group for subscales of physical component (5.3 vs 1.1, $P = 0.04$), bodily pain (17 vs 4.8, $P = 0.02$), physical functioning (12 vs -0.6, $P = 0.008$), and social functioning (11 vs -1.8, $P = 0.04$).

CONCLUSION

Fluoroscopic-guided intraarticular corticosteroid injection improved pain in patients with osteoarthritis of the hip.

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*See Glossary.

†Information provided by author.

Fluoroscopic-guided intraarticular corticosteroid (IAC) injection vs placebo in osteoarthritis of the hip†

Outcomes at 2 mo	IAC	Placebo	RBI (95% CI)	NNT (CI)
20% improvement in WOMAC pain score [§]	68%	24%	185% (40 to 556)	3 (2 to 7)
50% improvement in WOMAC pain score [§]	61%	14%	329% (66 to 1166)	3 (2 to 5)
	Mean change from baseline		Difference in change between groups (CI)	
WOMAC stiffness score	-62	2.3	-64 (-101 to -27)	
WOMAC physical function score	-431	-22	-409 (-656 to -162)	
Patient global assessment of health	-20	1.2	-21 (-39 to -4)	

‡WOMAC = Western Ontario and McMaster Universities Osteoarthritis Index; other abbreviations defined in Glossary. RBI, NNT, and CI calculated from data in article.

§Five 100-mm visual analog scales; 0 = no pain, 100 = worst pain.

||A 100-mm visual analog scale; higher score indicates more severe disease.

COMMENTARY

The trial by Lambert and colleagues is 1 of few randomized trials evaluating IACs for OA of the hip. The clinical question was focused and important, and the placebo-controlled double-blind study design was methodologically sound. The imbalance in the number of patients allocated to each group occurred by chance because the computer randomization schedule did not include any block balancing. The trial was stopped prematurely before enrolling the planned sample size when an ethics committee–approved interim analysis showed significant differences in benefit between groups. The resulting small numbers in the study made it difficult to balance for potential confounding factors: For example, radiologic status of the hip joint was not taken into account. This is unfortunate, given that it is ethically difficult to conduct placebo-controlled trials for this condition. Generalizability of results may be limited by the inclusion criteria, which demanded a group of patients with daily persistent pain in whom full pharmacotherapy had failed.

Despite these limitations and the severity of OA, the number needed to treat for an additional OA patient with a clinically important 50% reduction in pain for 3 months was only 3. This represents important clinical gains, particularly if the trends (nonsignificant) favoring the use

of other regular pharmacotherapies prove to be real. The placebo response rate appeared to be lower than in other published OA studies, which contributes to the difference between groups. The size and duration of the effect also appeared to be greater than those for IACs for OA of the knee.

IA injections carry a small risk for infection and should not be recommended if joint replacement surgery is planned in the next few months. The potentially negative small risk for radiation exposure related to fluoroscopic-guided injections may be circumvented if ultrasound guidance is used for future studies or routine clinical care. Although differences of opinion may exist regarding the application of ultrasound-guided injections in patients with advanced arthritis of the hip, this technique nonetheless warrants further evaluation.

The results suggest that IACs can offer important reductions in pain for ≥ 3 months in patients with persistent pain related to OA of the hip. Larger studies might be needed to further identify the subgroups most likely to respond.

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