STERIOD KNEE INJECTIONS FOR ARTHRITIS ARE NO BETTER THAN PLACEBO IN A RANDOMIZED CONTROLLED TRIAL

STUDY QUALITY: GOOD

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THE BOTTOM LINE

Among patients with knee osteoarthritis, injections of triamcinolone do not give better pain relief than injection of saline and result in increased radiographic cartilage loss at 2 years.

WHY IS THIS IMPORTANT?

Osteoarthritis of the knee is a leading cause of pain and disability among adults in the USA.² For patients who do not receive adequate pain relief from non-pharmacologic therapies and oral medications, intra-articular corticosteroid injection is a widely used treatment.³ Multiple meta-analyses suggest inconsistency of corticosteroid efficacy across trials.^{3, 4}

FACTS

STRUCTURE OF THE STUDY

- A randomized, placebo-controlled, double-blind study of 140 patients with symptomatic osteoarthritis of the knee compared intra-articular triamcinolone with intra-articular saline every 3 months. Patients were followed for 2 years.
- The 2 primary outcomes were pain and change in cartilage volume in the index compartment. Pain was measured with the Western Ontario and

McMaster Universities (WOMAC version 3.1) questionnaire. The pain subscale ranged from 0 (no pain) to 20 (extreme pain). The minimal clinically important improvement was a 3.94 difference in pain score. Cartilage volume was measured with MRI.

- Secondary outcomes included change in function. The function subscale ranged from 0 (no difficulty with daily activities) to 68 (extreme difficulty). The minimal clinically important improvement was a 6.66 difference in score.

STUDY FINDINGS

- There was no significant difference in knee pain severity between the treatment and placebo groups over the two years of the study (see Fig. 1).
- The intra-articular triamcinolone treatment was associated with significantly greater cartilage vol-

ume loss compared with saline (– 0.11 mm; 95% CI, – 0.20 to – 0.03 mm), as measured by MRI. The minimal clinically important cartilage loss is not established.

- There was no significant difference in function between the treatment and placebo groups.
- At the final visit, 45% of participants correctly guessed their treatment assignment, which is about the same as would be guessed by chance.

Study Quality and Applicability Considerations

Both clinicians and patients were blinded to medication or placebo, which reduces the risk of bias in favor of the treatment. Both the treatment and placebo were injected into the joint, which reduces bias in favor of active treatments. The injections were done every 3 months, regardless of initial response, which is different from what happens in usual clinical practice. The clinicians recruited clinic patients from a single academic medical center.

Figure 1 Pain at baseline at 2-year follow-up. WOMAC pain subscale ranges 0 (no pain) to 20 (extreme pain). Minimal clinically important improvement was a 3.94 decrease in pain score. The between-group difference in change was not significant (– 1.2 units in the triamcinolone group versus – 1.9 units in the saline group; between-group mean difference – 0.64; 95% CI, – 1.6 to 0.29)

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Tips for Discussion of Results with Patients

- Among patients with painful osteoarthritis of the knee, injecting steroids into the joint every 3 months for 2 years did not reduce pain any more than injecting salt water.
- Injecting steroids into the joint every 3 months for 2 years, compared with injecting salt water, resulted in thinner cartilage in the knee joint. We do not know if this will result in knee problems later.
- It is not known whether injecting steroids into the joint less often, such as only when pain worsens or fluid accumulates, would result in better outcomes or reduce the risk of cartilage thinning.

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The Bottom Line summaries reflect the expertise and opinions of the SGIM EBM Task Force as of the date of release of this summary.

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