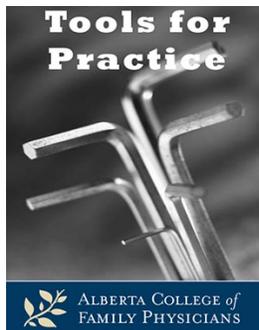


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March 30, 2015



Corticosteroid shots and knees: A match made in osteoarthritis heaven?

Clinical Question: What is the effectiveness of intra-articular corticosteroid injections in knee osteoarthritis?

Bottom Line: Corticosteroid intra-articular knee injections reduce osteoarthritis pain ~40% more than placebo and one in every 3-5 patients injected will have global symptom improvement in the first four weeks. Long-term pain relief is less certain but serious adverse events, like joint infection, are very rare (one in >14,000).

Evidence:

- We found six systematic reviews,¹⁻⁶ each with 5-13 Randomized Controlled Trials (RCTs) and 207-648 patients total. Comparing corticosteroid (triamcinolone 20-40 mg most common, methylprednisolone 40-120 mg next most common) to placebo injections.
 - Pain: On a 100 point Visual Analogue Scale (VAS) steroids statistically significantly reduced pain (from ~54 baseline)⁴ more than placebo:
 - 21-22 points lower at one week,^{1,2} 16.5 points lower at two weeks,³ 7.4 points at 3-4 weeks.¹
 - Average ~15 points better between 1-4 weeks.⁴
 - At later time points, difference is non-statistically significant.¹
 - Maximal effect may occur at 1.5 weeks.⁴
 - Pain: Hitting a particular pain reduction target or global improvement:
 - 74-78% for steroid vs. 45-54% placebo.¹⁻³
 - Number Needed to Treat (NNT)=3-5, at 1-4 weeks.¹⁻³
 - Results at >4 weeks inconsistent: Two found no effect,^{1,2} one reports NNT=5 at 16-24 weeks.³
 - Function and stiffness not reliably changed.⁵
 - Issues: Included RCTs were frequently small (≤ 50) and often short (example one week). Pooled results also often included few studies and lacked power.¹⁻⁶

Context:

- Overall, corticosteroid injections may be most efficacious therapies for knee osteoarthritis in the first 1-4 weeks.^{4,5}
- Unclear if one type of steroid better than another.⁷

- Maximum frequency ~4/year.
 - RCT injected steroids 4x/year for two years without any harms.⁸
 - Cohort of ≥4 injections/year found no harm.⁹
- Which clinical features influence success is unclear^{10,11} but increased radiographic severity may reduce effectiveness while increased clinical severity (pain and stiffness) may improve effectiveness.¹⁰
- Risk of joint infection one in 14,000-77,000 following intra-articular injection.¹²
- Guidelines generally recommend corticosteroid intra-articular injections,^{13,14} although uncertainty (due to insufficient long-term evidence) remains.¹⁵

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Disclosure:

Authors do not have any conflicts to disclose.

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