TAKE-HOME MESSAGE

Corticosteroids provide pain relief similar to that of nonsteroidal anti-inflammatory drugs for acute gout, with fewer adverse effects.

Are Corticosteroids Superior to Nonsteroidal Anti-inflammatory Drugs in the Treatment of Acute Gout?

EBEM Commentators
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METHODS

DATA SOURCES

An experienced information specialist searched MEDLINE, EMBASE, and the Cochrane Central Register of Controlled Trials from inception to present, without language restrictions. Trial registry platforms were searched for ongoing trials and hand searches of eligible trial reference lists were also performed.

STUDY SELECTION

Randomized and quasi-randomized trials comparing benefits and harms of corticosteroids and nonsteroidal anti-inflammatory drugs for treating acute gout in patients older than 18 years were included. The primary efficacy outcome was pain scores at less than 7 days and greater than or equal to 7 days; the primary safety outcome was bleeding.

DATA EXTRACTION AND SYNTHESIS

Two authors extracted data with standardized forms and independently assessed the risk of bias with the Cochrane assessment tool.[1] Discrepancies were resolved by consensus. Evidence quality was evaluated with the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system[2]; discrepancies were resolved by discussion. Dichotomous variables were reported as a relative risk with 95% confidence intervals (CIs), whereas continuous data were reported as a

Results

Table 1. Efficacy and safety outcomes for corticosteroids versus nonsteroidal anti-inflammatory drugs.

Outcomes	SMD (95% CI)	RR (95% CI)
Pain <7 days	−0.09 (−0.26 to 0.08)	
Pain ≥7 days	0.32 (−0.27 to 0.93)	
GI bleeding		0.09 (0.01 to 1.67)

SMD, Standardized mean difference; *RR*, relative risk; *GI*, gastrointestinal.
Outcomes were neither clinically nor statistically different.

Table 2. Adverse effects for corticosteroids versus nonsteroidal anti-inflammatory drugs.

Symptom	RR (95% CI)
Nausea	0.25 (0.11–0.54)
Vomiting	0.11 (0.02–0.56)
Indigestion	0.50 (0.27–0.92)
Hyperglycemia	5.00 (0.25–99.95)

The search identified 529 references; 6 trials evaluating 817 patients met inclusion criteria. The overall risk of bias was low in these trials, whereas the quality of the evidence was rated as low to moderate according to GRADE criteria. The meta-analysis demonstrated no difference between corticosteroids and nonsteroidal anti-inflammatory drugs for the following outcomes: short-term pain relief (<7 days), long-term pain relief (>7 days), time to resolution of pain, and requirement for additional analgesics (Table 1). Although there was no difference in the primary safety outcome (rates of gastrointestinal bleeding), the incidence of gastrointestinal adverse effects (nausea, vomiting, and indigestion) was lower in the corticosteroid group (Table 2). Subgroup analyses did not show a difference between either dosages or routes of administration (oral prednisolone versus intramuscular betamethasone and triamcinolone) for corticosteroids. An analysis of differences in nonsteroidal

mean difference or standardized mean difference with 95% CIs. A random-effects model was used to pool data. Statistical heterogeneity was measured with the Cochrane Q and I^2 statistics.

anti-inflammatory drugs (indomethacin, naproxen, and diclofenac) was not performed.

Commentary

Pain from acute gout is a common complaint in the emergency department (ED), accounting for approximately 200,000 ED visits in 2012.[3] It has a widely varying prevalence, but can affect up to 7% of elderly men.[4] Typical treatment modalities include colchicine, nonsteroidal anti-inflammatory drugs, and corticosteroids.[5] Because of their low cost and wide availability, nonsteroidal anti-inflammatory drugs are most commonly prescribed as the first-line treatment for acute gouty arthritis.[6] They are, however, contraindicated in patients with renal insufficiency, liver dysfunction, and bleeding disorders, and discouraged in the elderly and patients with a history of peptic ulcer disease.[7] Adverse effects of corticosteroids such as immunosuppression, adrenal suppression, glaucoma, myopathy, osteoporosis, or psychiatric disturbances are generally thought to be dose and duration dependent; prescribing for patients with underlying diabetes mellitus, active infections, or psychiatric conditions must be carefully considered.[8] Several studies, including a Cochrane review in 2008,[9] suggest that corticosteroids are superior to nonsteroidal anti-inflammatory drugs for acute pain while having fewer contraindications.

The evidence presented in this review was rated as low to moderate quality according to GRADE methodology, suggesting the need for additional prospective investigations. However, for patients who can tolerate them, corticosteroids appear to be a reasonable alternative to nonsteroidal anti-inflammatory drugs for the treatment of acute pain as a result of gout. This is especially helpful for patients for whom nonsteroidal anti-inflammatory drugs are either contraindicated (eg, renal or liver dysfunction, coagulopathy) or discouraged (ie, elderly patients or those with a history of peptic ulcer disease). The most common dosing regimen for corticosteroids in these studies of acute gout is oral prednisolone 30 mg daily for 4 to 5 days.

Editor's Note: This is a clinical synopsis, a regular feature of the *Annals'* Systematic Review Snapshot (SRS) series. The source for this systematic review snapshot is: **Billy CA, Lim RT, Ruospo M, et al. Corticosteroid or nonsteroidal antiinflammatory drugs for the treatment of acute gout: a systematic review of randomized controlled trials. *J Rheumatol.* 2018;45:128-136.**

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