



Q/ How effective—and safe—are systemic steroids for acute low back pain?

EVIDENCE-BASED ANSWER

A | SHORT COURSES OF SYSTEMIC STEROIDS ARE LIKELY SAFE, but they are ineffective. A single dose of intramuscular (IM) or intravenous (IV) methylprednisolone doesn't improve long-term pain scores in patients with low back pain and sciatica and produces conflicting effects on function. Oral prednisone (9-day taper) doesn't improve pain or function in patients with back pain and sciatica. A single

IM dose of methylprednisolone doesn't improve pain scores or function in patients with back pain without sciatica (strength of recommendation: **B**, randomized controlled trials [RCTs]).

No trials of corticosteroids for back pain reported an increase in adverse outcomes, but studies were small, and only short-term (1 month) follow-up data are available.

Evidence summary

A double-blind RCT of 82 patients who reported to an emergency department with acute low back pain and sciatica compared the efficacy of a single IM dose of 160 mg methylprednisolone with placebo.¹ Sciatica was confirmed with a positive straight leg test. All patients were given an instruction sheet and a small supply of naproxen and oxycodone with acetaminophen. The primary outcome was change in pain score, rated on a 0-to-10 visual analog scale (VAS).

Pain scores dropped in both groups over time. The magnitude of the change was not significantly greater in the steroid group (at 1 week: mean difference=1.1; 95% confidence interval [CI], -0.5 to 2.8; at 1 month: mean difference=1.3; 95% CI, -0.5 to 2.7).

Among secondary outcomes at 1 month, 19% of the methylprednisolone group reported continued functional disability compared with 49% of the placebo group (absolute difference=30%; 95% CI, 9-49; *P*=.007). Analgesic use in the previous 24 hours was similar for both groups (22% with steroid injection vs 43% with placebo; *P*=.06). There were no

reports of gastrointestinal bleeding, osteonecrosis, infection, or serious hyperglycemia.

The same applies to back pain without sciatica

Another double-blind RCT of 87 patients evaluated IM methylprednisolone for acute low back pain of less than 1 week duration without sciatica.² Patients received a single IM dose of 160 mg methylprednisolone or placebo. Both groups were given an instruction sheet and a small supply of naproxen and oxycodone with acetaminophen. The primary outcome was change in pain score on a 0-to-10 VAS.

Pain scores dropped in both groups over time, but the reduction wasn't significantly larger in the steroid group (at 1 week: mean difference=0.6; 95% CI, -0.9 to 2.2; at 1 month: mean difference=0.6; 95% CI, -1.0 to 2.2). At 1 month, neither functional status nor "medication use in the preceding 24 hours" differed between the 2 groups.

The most common adverse effects were upper gastrointestinal complaints, drowsiness, and weakness. Adverse effect rates were

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> The American College of Physicians and the American Pain Society recommend acetaminophen and NSAIDs as first-line treatment for back pain with or without sciatica.

comparable for the 2 groups and believed to be caused by the naproxen and oxycodone all patients received.

Relief of sciatica with IV steroids is short-lived

A double-blind RCT evaluated the efficacy of a single IV dose of 500 mg methylprednisolone or placebo for 65 patients with leg sciatica (with or without back pain) associated with imaging-confirmed lumbar disk disease.³ The primary outcome was reduction in sciatic leg pain during the first 3 days after injection as measured on a 100-mm VAS. All patients received standard pain medication and physical therapy.

At day 1, 48% of the methylprednisolone group and 28% of the placebo group showed a decrease on the VAS for sciatic pain of 20 mm or more ($P=.04$; number needed to treat=5). Pain measurements at 2, 3, 10, and 30 days found no significant difference between the groups, however. Nor did the groups differ significantly in functional status or medication use. The study didn't assess adverse events.

Oral prednisone relieves back pain with sciatica no better than placebo

A double-blind RCT compared an oral

prednisone taper (60 mg, 40 mg, and 20 mg each for 3 days) with placebo for treating 27 patients with acute low back pain and sciatica.⁴ All patients received nonsteroidal anti-inflammatory drugs (NSAIDs) and narcotics for pain control, directions to engage in activity as tolerated, and a referral for physical therapy. Outcomes were evaluated weekly for 1 month, then monthly for 5 months.

Pain scores, functional ability, and medication use didn't differ significantly between the 2 groups. Steroid injections were later given to 15% of the oral steroid group and 43% of the control group, but the difference in outcomes wasn't statistically significant. Investigators didn't assess adverse events.

Recommendations

The joint guidelines of the American College of Physicians and the American Pain Society recommend acetaminophen and NSAIDs as first-line treatments for back pain and back pain with sciatica.⁵ The guidelines advise against using systemic corticosteroids because "they have not been shown to be more effective than placebo." **JFP**

References

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