

Jack Wells, MD, MHA, and James Stevermer, MD, MSPH
 Department of Family and Community Medicine, University of Missouri, Columbia
PURLs EDITOR
Bernard Ewigman, MD, MSPH
 Department of Family Medicine, The University of Chicago

Migraine treatment “tweak” could reduce office visits

Adding dexamethasone to standard treatment for acute migraine decreases the incidence of short-term recurrence.

Practice changer

Add dexamethasone to the standard treatment of moderate to severe migraine headache; a single dose (8-24 mg) may prevent short-term recurrence, resulting in less need for medication and fewer repeat visits to the office or emergency department.¹

Strength of recommendation:
A: A meta-analysis

Singh A, Alter HJ, Zaia B. Does the addition of dexamethasone to standard therapy for acute migraine headache decrease the incidence of recurrent headache for patients treated in the emergency department? A meta-analysis and systematic review of the literature. *Acad Emerg Med.* 2008;15:1223-1233.

ILLUSTRATIVE CASE

A 35-year-old woman comes to your office with a headache that has persisted for 24 hours—the typical duration of her migraines, she says. She is nauseated, photophobic, and has a right-sided headache that she rates as moderate to severe. You’ve read about the potential role of corticosteroids in treating acute migraine and wonder whether to add dexamethasone (Decadron) to the standard treatment.

Migraine headaches present a therapeutic challenge: You need to determine which therapeutic regimen is best, not only for immediate relief, but also for its ability to prevent recurrence. With up to two-thirds of migraine patients experiencing another headache within 24 to 48 hours of treatment,¹ many seek repeat treatment within a short time frame.² As such, they’re at risk for medication overuse, which may contribute to an increase in both the intensity and frequency of symptoms.³

A steroid may blunt inflammatory response

The pathogenesis of migraine headache is poorly understood. One theory is that migraines are associated with a neurogenic inflammatory response with the release of vasoactive neuropeptide. This inflammation is thought to be responsible for the initiation and perpetuation of the headache.¹ It therefore follows that the addition of a steroid to standard migraine therapy may blunt this inflammatory response. Several small studies have investigated this possibility, but they had inadequate power to detect a meaningful difference. The meta-analysis detailed in this PURL makes a stronger case.

Stop headaches before they start

Author Jack Wells presents migraine prevention tips

PURLs methodology

This study was selected and evaluated using FPIN’s Priority Updates from the Research Literature (PURL) Surveillance System methodology. The criteria and findings leading to the selection of this study as a PURL can be accessed at www.jfponline.com/purls.

STUDY SUMMARY

■ Only 1 steroid studied, but it delivered

Singh and colleagues performed a systematic search for randomized controlled trials (RCTs) studying the use of corticosteroids in the emergency department (ED) as a treatment adjunct for migraine headache.¹ They used rigorous search methods and well-defined inclusion criteria. The primary outcome of interest was the proportion of migraine patients who reported symptoms of moderate or severe headache at 24- to 72-hour follow-up.

Seven studies, with a total of 742 patients, met the inclusion criteria. All were RCTs in which participants and providers were blinded to treatment assignments, and all involved the addition of dexamethasone. No studies evaluating other steroids were found in the literature review. The patients were all diagnosed as having acute migraine headache by the ED physician, based on International Headache Society criteria.⁴

The adjunctive therapy—dexamethasone or placebo—was initiated in the ED, in addition to routine treatment. The standard migraine treatment was not the same for all the RCTs and was based on physician choice. Routinely used medications included metoclopramide (Reglan), ketorolac (Toradol), chlorpromazine (Compazine), and diphenhydramine (Benadryl). Doses of dexamethasone also varied, ranging from 8 to 24 mg; the median dose was 15 mg. All studies cited the proportion of migraine patients who had self-reported moderate to severe headache at 24 to 72 hours after treatment.

Dexamethasone prevents 1 recurrence in 10. The meta-analysis revealed a moderate benefit when dexamethasone was added to standard therapy for migraine headache in the ED. The addition of dexamethasone to standard migraine therapy prevented almost 1 in 10 patients from experiencing moderate to severe recurrent headache in 24 to 72 hours (relative risk [RR]=0.87, 95% confidence interval

[CI], 0.80-0.95). Transient side effects occurred in about 25% of patients in both the treatment and placebo groups.

Sensitivity analysis indicated that this meta-analysis was fairly robust, with no single trial dominating the results. There was no evidence of missing studies due to publication bias. These results are consistent with a similar meta-analysis, which also included 7 studies, all but 1 of which were the same.⁵

WHAT'S NEW?

■ Earlier findings gain strength in numbers

This meta-analysis demonstrates that adjunctive therapy with a steroid is a viable option in the management of acute migraines—an intervention that each of the individual 7 RCTs was too small to justify on its own. Specifically, the addition of dexamethasone to standard migraine treatment may prevent severe recurrent pain that would otherwise necessitate a repeat visit to the ED—or to your office.

CAVEATS

■ Will it work in an office setting?

This meta-analysis addresses more severe headache recurrences, which are likely to lead patients to seek additional medication or repeat evaluation. Indeed, all 7 RCTs included in the evaluation were performed in an ED setting. And 6 of the 7 trials assessed dexamethasone administered parenterally, which may not be possible in some office settings. In the single trial in which the steroid was administered orally, patients were given 8 mg dexamethasone in addition to intravenous phenothiazines. In the 63 patients included in that study, the relative risk of recurrent headache was 0.69 (95% CI, 0.33-1.45). However, among those with a headache duration of <24 hours (n=40, 63.5%), the relative risk was 0.33 (95% CI, 0.11-1.05).⁶

Other questions: It is not clear from this single trial whether oral dexamethasone is as effective as IV administration.

CONTINUED

FAST TRACK

The addition of dexamethasone to standard treatment may prevent severe recurrent pain that would otherwise necessitate an office visit.

Nor is it clear whether other corticosteroids will work as well, as no studies of other agents have been reported.^{1,5} The lowest effective dose of dexamethasone is also not known.

BARRIERS TO IMPLEMENTATION

Repeat steroid use raises risk of complications

Based on this meta-analysis, it is unclear whether IV administration is required for the desired benefit. Another potential concern is associated with the administration of frequent dexamethasone boluses in patients with frequent migraines, which could lead to any one of a number of steroid-related adverse reactions, including osteonecrosis.⁷ The risks of steroid-related complications should be considered in using this therapy, especially for patients receiving multiple doses of dexamethasone. ■

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