Single dose dexamethasone reduced the recurrence of moderate to severe migraine at up to 72-hours follow-up

**Clinical Problem:** A 35 year-old woman with a history of migraines without aura presents to the emergency department with a severe migraine headache. The ER physician calls to ask if he should give her dexamethasone in addition to metoclopramide.

**Clinical Question:** For patients presenting to the emergency department with acute migraine, is the addition of dexamethasone to standard therapy safe and effective for preventing migraine relapse?

**Search Strategy:**
- Pubmed: *Key words*: migraine disorders and dexamethasone *Limits*: Humans, Meta-Analysis, English. 2 meta-analysis published in 2008\(^1\),\(^2\). The first was chosen for review\(^1\).
- SUMSearch: No new articles.
- Bandolier: Section devoted to migraine does not review evidence for dexamethasone.
- ACP Journal Club: Review of chosen article\(^3\).
- Cochrane: Protocol in place for parenteral corticosteroids.

**Clinical Bottom Lines:**
1. The addition of dexamethasone (median dose 15mg, range 8-24mg) to standard acute migraine therapy effectively reduced the recurrence of moderate or severe headache at 24- to 72-hours (NNT 10).
2. Administration of dexamethasone did not result in any severe or persistent adverse events, although this was incompletely reported in all studies.

**The Evidence:**
Meta-analysis of data from 7 RCTs (2 abstracts) involving a total of 742 patients, on the use of dexamethasone in addition to standard therapy for prevention of headache relapse in patients with acute migraine headache in the emergency department (ED). *Inclusion criteria*: RCTs, double-blinding, diagnosis of acute migraine headache, therapy initiated in ED, comparison to control group, include the proportion of self-reported symptoms of moderate or severe headache at 24- to 72-hour follow-up evaluation. *Primary outcome*: The proportion of migraine patients with self-reported symptoms of moderate or severe headache at 24- to 72-hour follow-up evaluation. Side effects and adverse events are also reported.

**Data:**

<table>
<thead>
<tr>
<th>Patients with moderate or severe headache at 24- to 72-hour follow-up evaluation</th>
<th>Standard therapy plus dexamethasone</th>
<th>Standard therapy plus placebo</th>
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<tbody>
<tr>
<td>91/382 (23.8%)</td>
<td>121/360 (33.6%)</td>
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Risk ratio (RR) = 0.87 (95% CI = 0.80-0.95)
Absolute risk reduction (ARR) = 9.8%
Number needed to treat (NNT) = 10.2

Side Effects and Adverse events
- 26% of patients receiving dexamethasone and 23% of patients receiving placebo reported an adverse event.
- The most common adverse events attributable to dexamethasone were acute medication reactions (non-defined), numbness/tingling, flushing, and irritation at the IV site.
- All adverse events were transient and required no treatment.

Comments:
1. The meta-analysis was of high quality.
2. All 7 included trials were high quality (Jadad score 5).
3. Trials were heterogeneous in regards to choice of standard migraine therapy, headache scales, dose and route of dexamethasone, and length of follow-up, but heterogeneity was not significant on 2 tests of heterogeneity; a third test of heterogeneity showed the possibility of moderate heterogeneity according to the upper limit of the 95% confidence interval.
4. Adverse events were incompletely recorded in all trials.
5. The results of this meta-analysis are similar to those of an earlier meta-analysis.

References:

Key Words: acute migraine, dexamethasone, treatment, meta-analysis

Appraiser: Andrea Salmon and the UWO Evidence Based Neurology Group

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