

Title: Migraine treatment “tweak” could reduce office visits. *J Fam Pract.* 2009;58:362-364.

Potential PURL Review Form: Systematic reviews and meta-analyses

SECTION 1: IDENTIFYING INFORMATION

1. Citation	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. <i>Acad Emerg Med.</i> 2008 Oct 27. [Epub ahead of print].
2. Hypertext link to PDF of full article	http://www3.interscience.wiley.com/journal/121489740/abstract
3. First date published study available to readers	October 25, 2008
4. PubMed ID	18976336
5. Nominated By	Jim Stevermer
6. Institutional Affiliation of Nominator	University of Missouri
7. Date Nominated	January 17, 2009
8. Identified Through	Poems Review
9. PURLS Editor Reviewing Nominated Potential PURL	Bernard Ewigman
10. Nomination Decision Date	January 20, 2009
11. Potential PURL Review Form (PPRF) Type	Meta-analysis
12. Other comments, materials or discussion	
13. Assigned Potential PURL Reviewer	Mari Egan
14. Reviewer Affiliation	University of Chicago
15. Date Review Due	February 12, 2009

16. Abstract	<p>Objectives: Neurogenic inflammation is thought to play a role in the development and perpetuation of migraine headache. The emergency department (ED) administration of dexamethasone in addition to standard antimigraine therapy has been used to decrease the incidence of recurrent headaches at 24 to 72 hours following evaluation. This systematic review details the completed trials that have evaluated the use of dexamethasone in this role. Methods: The authors searched MEDLINE, EMBASE, CINAHL, LILACS, recent emergency medicine scientific abstracts, and several prepublication trial registries for potential investigations related to the research question. The authors included studies that incorporated randomized, double-blind, placebo-controlled methodology and that were performed in the ED. A fixed-effects and random-effects model was used to obtain summary risk ratios (RRs) and 95% confidence intervals (CIs) for the self-reported outcome of moderate or severe headache on follow-up evaluation. Results: A pooled analysis of 7 trials involving 742 patients suggests a modest but significant benefit when dexamethasone is added to standard antimigraine therapy to reduce the rate of patients with moderate or severe headache on 24- to 72-hour follow-up evaluation (RR=0.87, 95% CI=0.80-0.95; absolute risk reduction=9.7%). The treatment of 1000 patients with acute migraine headache using dexamethasone in addition to standard antimigraine therapy would be expected to prevent 97 patients from experiencing the outcome of moderate or severe headache at 24 to 72 hours after ED evaluation. The sensitivity analysis yielded similar results with sequential trial elimination, indicating that no single trial was responsible for the overall result. Adverse effects related to the administration of a single dose of dexamethasone were infrequent, mild, and transient. Conclusions: These results suggest that dexamethasone is efficacious in preventing headache recurrence and safe when added to standard treatment for the management of acute migraine headache in the ED.</p>
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SECTION 2: CRITICAL APPRAISAL OF VALIDITY

1. What types of studies are included in this review?	This is a meta-analysis of randomized controlled trials. Two scientific abstracts were included.
2. What is the key question addressed by this review? Summarize the main conclusions and any strengths or weaknesses.	<p>Evaluated dexamethasone in the setting of acute migraine headache.</p> <p>Pooled data included the results from 742 patients encompassing 7 high-quality clinical trials. The combined result of all trials, using either the fixed-effects or random-effects model, suggests a moderate benefit when dexamethasone is added to standard therapy for the acute migraine headache in the ED.</p>
3. Study addresses an appropriate and clearly focused question	Adequately addressed
4. A description of the methodology used is included.	Adequately addressed
5. The literature search is sufficiently rigorous to identify all the relevant studies.	Adequately addressed
6. Study quality is assessed and taken into account.	Adequately addressed

<p>7. There are enough similarities between selected studies to make combining them reasonable.</p>	<p>Adequately addressed</p>
<p>8. Are patient-oriented outcomes included? If yes, what are they?</p>	<p>Three studies used a 5-category headache scale, and 3 studies used a 4-category headache scale. One study reported headache recurrence as a dichotomous variable. The combined result of all trials, using either the fixed-effects or random-effects model, suggests a moderate benefit when dexamethasone is added to standard therapy for the acute migraine headache in the ED (RR=0.87; 95% CI, 0.80-0.95; Figure 2). The pooled absolute risk reduction was 9.7%.</p>
<p>9. Is funding a potential source of bias? If yes, what measures (if any) were taken to ensure scientific integrity?</p>	<p>None of our statistical tests evaluating for publication bias revealed evidence of significant bias.</p>
<p>10. To which patients might the findings apply? Include patients in the meta-analysis and other patients to whom the findings may be generalized.</p>	<p>Patients who present for acute treatment of a migraine headache.</p>
<p>11. In what care settings might the findings apply, or not apply?</p>	<p>ER or clinics that can give IV medications for treatment of migraine headaches.</p>
<p>12. To which clinicians or policy makers might the findings be relevant?</p>	<p>All clinicians who treat acute migraine headaches.</p>

SECTION 3: REVIEW OF SECONDARY LITERATURE

1. DynaMed excerpts	<ul style="list-style-type: none"> DynaMed cites two studies on parenteral use of dexamethasone to prevent recurrence of migraine: one showed a benefit and the other did not. Reference: <i>BMJ</i>. 2008;336:1359-1361 Reference: <i>Am J Emerg Med</i>. 2008;26:124-130
2. DynaMed citation/access date	Migraines. Dynamed [database online]. Available at: http://www.DynamicMedical.com . Accessed February 12, 2009.
3. Bottom line recommendation or summary of evidence from DynaMed (1-2 sentences)	Parenteral dexamethasone may or may not reduce headache recurrence within 72 hours (level 2 [mid-level] evidence).
4. UpToDate excerpts	<p>Abortive therapy plus parenteral dexamethasone: When added to standard acute migraine therapy, parenteral treatment with dexamethasone reduces the rate of early headache recurrence. Dexamethasone provided no additional benefit for immediate relief of headache.</p> <p>Colman I, Friedman BW, Brown MD, Innes GD, Grafstein E, Roberts TE, Rowe BH. Parenteral dexamethasone for acute severe migraine headache: meta-analysis of randomised controlled trials for preventing recurrence. <i>BMJ</i>. 2008;336:1359-1361.</p>
5. UpToDate citation/access date	Migraines. In: Basow DS, ed. UpToDate [database online]. Waltham, Mass: UpToDate; 2009. Available at: http://www.uptodate.com . Accessed February 12, 2009.
6. Bottom line recommendation or summary of evidence from UpToDate (1-2 sentences)	UTD authors suggest a dose of parenteral dexamethasone (10-25 mg) to reduce the risk of headache recurrence within the first 24 hours or so. They caution that frequent use of glucocorticoids may lead to toxicity such as adrenal suppression.
7. PEPID PCP excerpts	No mention of dexamethasone for treatment of acute migraine.
8. PEPID citation/access data	None.
9. PEPID content updating	<p>1. Do you recommend that PEPID get updated on this topic? Yes, there is important evidence or recommendations that are missing.</p> <p>2. Is there an EBM Inquiry (HelpDesk Answers and Clinical Inquiries) as indicated by the EB icon (EB) that should be updated on the basis of the review? Yes, there is important evidence or recommendations that are missing.</p>
10. Other excerpts (USPSTF; other guidelines; etc.)	Report of an European Federation of Neurological Societies (EFNS) task force: Status migrainosus can probably be treated by steroids.

11. Citations for other excerpts	Members of the task force; Evers S, Afra J, Frese A, Goadsby PJ, Linde M, May A, Sándor PS. EFNS guideline on the drug treatment of migraine - report of an EFNS task force. <i>Eur J Neurol.</i> 2006;13:560-572.
12. Bottom line recommendation or summary of evidence from other sources (1-2 sentences)	For the acute treatment of migraine attacks, oral nonsteroidal anti-inflammatory drugs (NSAIDs) and triptans are recommended. The administration should follow the concept of stratified treatment. Before intake of NSAIDs and triptans, oral metoclopramide or domperidon is recommended. In very severe attacks, intravenous acetylsalicylic acid or subcutaneous sumatriptan are drugs of first choice.
SECTION 4: CONCLUSIONS	
1. Validity: How well does the study minimize sources of internal bias and maximize internal validity? Give one number on a scale of 1 to 7 (1=extremely well; 4=neutral; 7=extremely poorly)	2
2. If 4.1 was coded as 4, 5, 6, or 7, please describe the potential bias and how it could affect the study results. Specifically, what is the likely direction in which potential sources of internal bias might affect the results?	
3. Relevance: Are the results of this study generalizable to and relevant to the health care needs of patients cared for by “full scope” family physicians? Give one number on a scale of 1 to 7 (1=extremely well; 4=neutral; 7=extremely poorly)	2
4. If 4.3 was coded as 4, 5, 6, or 7, please provide an explanation.	
5. Practice-changing potential: If the findings of the study are both valid and relevant, does the practice that would be based on these findings represent a change from current practice? Give one number on a scale of 1 to 7 (1=definitely a change from current practice; 4=uncertain; 7=definitely not a change from current practice)	5
6. If 4.5 was coded as 1, 2, 3, or 4, please describe the potential new practice recommendation. Please be specific about what should be done, the target patient population and the expected benefit.	
7. Applicability to a Family Medical Care Setting: Is the change in practice recommendation something that could be done in a medical care setting by a family physician (office, hospital, nursing home, etc), such as a prescribing a medication, vitamin or herbal remedy; performing or ordering a diagnostic test; performing or referring for a procedure; advising, educating or counseling a patient; or creating a system for implementing an intervention? Give one number on a scale of 1 to 7 (1=definitely could be done in a medical care setting; 4=uncertain; 7=definitely could not be done in a medical care setting)	2

8. If you coded 4.7 as a 4, 5, 6 or 7, please explain.	
9. Immediacy of Implementation: Are there major barriers to immediate implementation? Would the cost or the potential for reimbursement prohibit implementation in most family medicine practices? Are there regulatory issues that prohibit implementation? Is the service, device, drug or other essentials available on the market? Give one number on a scale of 1 to 7 (1=definitely could be immediately applied; 4=uncertain; 7=definitely could not be immediately applied)	2-3
10. If you coded 4.9 as 4, 5, 6, or 7, please explain why.	
11. Clinical meaningful outcomes or patient-oriented outcomes: Are the outcomes measured in the study clinically meaningful or patient oriented? Give one number on a scale of 1 to 7 (1=definitely clinically meaningful or patient oriented; 4=uncertain; 7=definitely not clinically meaningful or patient oriented)	3
12. If you coded 4.11 as a 4, 5, 6, or 7, please explain why.	
13. In your opinion, is this a Pending PURL? Give one number on a scale of 1 to 7 (1=definitely a Pending PURL; 4=uncertain; 7=definitely not a Pending PURL) Criteria for a Pending PURL: <ul style="list-style-type: none"> <input type="checkbox"/> Valid: Strong internal scientific validity; the findings appears to be true. <input type="checkbox"/> Relevant: Relevant to the practice of family medicine <input type="checkbox"/> Practice changing: There is a specific identifiable new practice recommendation that is applicable to what family physicians do in medical care settings and seems different than current practice. <input type="checkbox"/> Applicability in medical setting <input type="checkbox"/> Immediacy of implementation 	4
14. Comments on your response in 4.13	Many guidelines already advise the use of dexamethasone for treatment of migraine headaches.
SECTION 5: EDITORIAL DECISIONS	
1. FPIN PURLs editorial decision	Pending PURL Review—Schedule for Review
2. Follow-up issues for pending PURL Reviewer	Sermo poll: Do people know about this already? Specifically, do primary care doctors know that adding dexamethasone can prevent recurrence of migraine?
3. FPIN PURLS Editor making decision	Sarah-Anne Schumann

4. Date of decision	February 12, 2009
5. Brief summary of decision	Although the secondary sources make it clear this is not new information, no one in the room had known about this. We assumed that ER doctors and neurologists already do this, but most family doctors do not, and we confirmed that this would be a practice changer with a Sermo poll.