

Is dexamethasone effective in treating acute migraine headache?



Clinical question

"Is dexamethasone an effective agent for treating patients presenting to an emergency department with an acute migraine headache?" A clinician in the emergency department of a major teaching hospital wanted information on the relative efficacy of dexamethasone compared with other recognised pharmacological treatments.



Search question

The formulated search question followed a standard patients/interventions/comparisons/outcomes (PICO) format. The patients relevant to the search were those presenting to an emergency department for management of migraine. The relevant interventions were pharmacological treatments, including dexamethasone. The ideal comparison to address this treatment question would be a randomised controlled trial comparing a group of patients receiving dexamethasone with a control group not receiving dexamethasone. We made no assumptions about specific clinical outcomes of interest, but pursued all outcomes associated with relief from headache.



Search

Using the terms "migraine", "vascular headaches", "dexamethasone" and "corticosteroids", we conducted a Medline search for relevant articles published between 1966 and 2000. As the initial investigation retrieved only a small number of articles, we also searched the *Cochrane Library* and *CINAHL* (Cumulative Index to Nursing and Allied Health Literature) databases using the same search strategy. At the clinician's request, we excluded studies that were conducted in settings other than emergency departments.



Summary of findings

Information about the efficacy of dexamethasone for the treatment of migraine in the emergency department was limited to one non-randomised study involving three treatment arms.¹ The patients were divided into the three groups according to the most commonly used treatments for migraine in the emergency department of a large community hospital (see Box). All patients were telephoned 24 hours after treatment to determine the nature of their residual symptoms according to the following scale: 1 (no headache), 2 (mild

headache), 3 (moderate headache) or 4 (severe headache). The author interpreted scores of 1 or 2 to be indicative of marked relief of headache: 41 of 57 (72%) patients in Group 3 (whose treatment included dexamethasone) reported marked relief, compared with 21 of 73 (29%) patients in Group 1 and 12 of 32 (37%) patients in Group 2. These differences in headache relief across treatment groups were highly unlikely to have occurred by chance ($\chi^2=25.11$; $df=2$; $P < 0.001$).

Gallagher concluded that the inclusion of dexamethasone in the treatment of intractable migraine may be of some benefit to some patients.¹ However, it is important to note that the article did not address a number of important matters, such as the way in which patients were allocated to the three treatment groups, baseline patient characteristics (eg, age, sex, severity of headache), psychometric properties of the headache index scale, or the method of administration of the agents used.

Further details are available in our complete report.²



Outcome

Our report to the requesting clinician stated that dexamethasone in conjunction with other agents may be of some benefit to patients presenting to the emergency department with intractable migraine. However, it appears that its reputation as an effective agent in this setting is based more on clinical experience than on rigorous published data. It is of interest that an evidence-based guideline for the acute management of migraine issued by the Canadian Association of Emergency Physicians³ drew a similar conclusion. The clinician, after examining the Canadian guideline, suggested that undertaking a review of the guideline and clinical practice within the emergency department would be the most appropriate step.

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(Received 7 Feb, accepted 2 Apr 2001)

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Agents used for the treatment of acute migraine in an emergency department study¹

	Patient group 1 (n=73)	Patient group 2 (n=32)	Patient group 3 (n=57)
Drug combination used	Pethidine 75–100 mg/ promethazine 50 mg	Dihydroergotamine mesylate 1 mg/ pethidine 75–100 mg	Pethidine 75–100 mg/promethazine 50 mg/dexamethasone 8 mg
Proportion of patients reporting relief from headache	29%	37%	72%