A 3 item screening instrument had moderate sensitivity and specificity for detecting migraine headaches

Alexander W Chessman

Updated information and services can be found at:
http://ebm.bmjjournals.com/cgi/content/full/9/2/56

These include:

References	This article cites 2 articles, 1 of which can be accessed free at: **http://ebm.bmjjournals.com/cgi/content/full/9/2/56#BIBL**
Rapid responses	You can respond to this article at: **http://ebm.bmjjournals.com/cgi/eletter-submit/9/2/56**
Email alerting service	Receive free email alerts when new articles cite this article - sign up in the box at the top right corner of the article
Topic collections	Articles on similar topics can be found in the following collections Clinical Research (575 articles) Migraine (80 articles)

Notes

To order reprints of this article go to:
http://www.bmjjournals.com/cgi/reprintform

To subscribe to *Evidence-Based Medicine* go to:
http://www.bmjjournals.com/subscriptions/

A 3 item screening instrument had moderate sensitivity and specificity for detecting migraine headaches

Lipton RB, Dodick D, Sadovsky R, *et al.* A self-administered screener for migraine in primary care: The ID Migraine(TM) validation study. *Neurology* 2003;**61**:375–82.

Clinical impact ratings GP/FP/Primary care ★★★★★☆

Q In an outpatient primary care setting, what is the accuracy of a brief screening instrument (developed from the International Headache Society [IHS] criteria for migraine) that uses self report for detecting migraine headaches?

METHODS

Design: blinded comparison of a 3 item migraine screening tool with a diagnosis of migraine headache made by headache experts.

Setting: 27 primary care practices and 12 headache speciality practice sites in the US.

Patients: 451 patients 18–55 years of age (mean age 39 y, 76% women) who presented for routine primary care appointments and reported ≥2 headaches in the past 3 months. Exclusion criteria included inability to read and write English, previous diagnosis of migraine, and participation in a previous Pfizer sponsored migraine study.

Description of test: initially, patients completed a 9 item migraine screener—a self rated paper and pencil questionnaire developed by a consensus panel and based on IHS criteria for migraine headaches. An item reduction process using logistic regression to assess the associations between a response to a screening item and the diagnostic standard resulted in a brief 3 item screener consisting of nausea, photophobia, and headache related disability. The 3 screening questions were: (1) Do you feel nauseated or sick to your stomach? (2) Did your headache limit you from working, studying, or doing what you needed to do for any day in the previous 3 months? (3) Does light bother you a lot more than when you don't have headaches? The cut-off point for a diagnosis of migraine headache was ≥2 positive responses.

Diagnostic standard: headache specialists made a definitive diagnosis of migraine headache based on both clinical and IHS criteria using a semistructured interview.

Outcomes: sensitivity and specificity, positive predictive value, and negative and positive likelihood ratios.

MAIN RESULTS

75% and 79% of patients had migraine headache based on clinical evaluation and IHS criteria, respectively. The table shows the sensitivity and specificity, positive predictive value, and negative and positive likelihood ratios (calculated using a prevalence of 79% for migraine headache) of the 3 item migraine screener. Sensitivity analysis showed that the diagnostic properties of the 3 item screening instrument did not differ substantially by sex, age, presence of other comorbid headaches, or previous diagnostic status.

CONCLUSION

In an outpatient primary care setting, a 3 item screener consisting of nausea, photophobia, and headache related disability had moderate sensitivity and specificity for detecting migraine headaches.

Commentary

Lipton *et al* developed and validated a simple set of questions to screen for migraines in patients who had frequent and severe headaches. The underlying assumption was that an early diagnosis and treatment relieves pain and improves functional status.

The reference standard was the decision of 1 of the headache specialists at 1 of the 12 specialty practices located near the 27 primary care practices from which the study sample was drawn. This standard could have been stronger if 2 specialists had done separate determinations, and the results compared to ensure reliability. Every other effort, however, was made to ensure a reasonable standard including blinding the specialists, use of a computer algorithm (based on IHS criteria) to double check the accuracy of the definitive diagnosis, and exclusion of patients who did not meet IHS criteria for migraine.

Although headache specialist practices are usually in larger metropolitan communities, and the primary care practices may, therefore, have been clustered in larger cities, it is unlikely that a predominantly urban sample population introduced bias in the study.

One criterion for entry into the study, a headache that had limited patients' functional status or quality of life, could have biased the sample toward a higher prevalence of migraine headaches. One of the 9 IHS criteria is similar, and it is little surprise that one of the 3 items related to determination of migraine was a measure of disability.

The screening test appears to be very simple and easy to administer. The test is likely to be reproducible and could easily fit into the routine care of patients. What remains to be proved, however, is that using the test in practice actually improves the health of the target population. A body of literature argues for screening and early diagnosis of depression and anxiety.[1] But this literature, similarly, has not made the connection between screening and outcome (ie, having a test that functions well and at the same time reduces the burden of an undiagnosed illness in a patient population).

Alexander W Chessman, MD
Medical University of South Carolina
Charleston, South Carolina, USA

1 Staab JP, Datto CJ, Weinrieb RM, *et al.* Detection and diagnosis of psychiatric disorders in primary medical care settings. *Med Clin North Am* 2001;**85**:579–96.

Diagnostic properties of a 3 item screener consisting of nausea, photophobia, and headache related disability for detecting migraine headaches*

Test	Sensitivity (95% CI)	Specificity (CI)	PPV (CI)	+LR	−LR
3 item screener	81% (77 to 85)	75% (64 to 84)	93% (90 to 96)	3.3	0.25

*PPV = positive predictive value. Diagnostic terms defined in glossary.

For correspondence: Dr R B Lipton, Albert Einstein College of Medicine, New York, NY, USA. rlipton@aecom.yu.edu