

## Practice Corner: Clinical practice guidelines and handheld computers

A 22-year-old woman comes to your office for the first time complaining of a 1-day history of a "terrible headache." She describes a throbbing pain on the left side of her head. She works as a mail carrier, and the pain became worse this morning with walking. The patient describes accompanying anorexia, nausea, and several episodes of vomiting. She reports sensitivity to bright lights and loud sounds and tells you, "I just want to crawl into a dark corner until it goes away." She has taken ibuprofen, 400 mg every 6 hours, without relief. The patient reports no auras, facial pain, nasal discharge, tearing, fever, neck pain or stiffness, weakness, dizziness, numbness or tingling in the extremities, or change in vision.

The patient has never had a headache like this before and has no significant medical history. She uses no medications apart from acetaminophen. Her older sister, who has had headaches of this type for several years, accompanies the patient. You decide that your patient is having a migraine and that you will probably prescribe a triptan. However, you want to know what forms are currently recommended in what doses, given the patient's severe nausea. You formulate the question: In a patient with migraine and severe nausea, what are the current best treatment options to decrease acute symptoms?

### SEARCH AND APPRAISAL

Because of time constraints, you decide to use a new application you have recently downloaded to your handheld computer. The Redi-Reference Clinical Guidelines Handbook is a database of summaries of clinical practice guidelines for Palm OS-based handheld computers (downloadable from <http://shop.store.yahoo.com/piloptgears/redclnguide.html>). The database is updated quarterly and currently includes > 30 guidelines classified according to specialty. These include cardiology, endocrinology, infectious diseases, immunizations, neurology, psychiatry, pulmonary diseases, and other (miscellaneous). All guidelines are from specialty organizations or U.S. federal organizations, such as the National Institutes of Health. This database functions much like the National Guideline Clearinghouse (1), a Web-based, government-sponsored source of guideline summaries, in that the guidelines included in Redi-Reference are not critically appraised before being included in the database or selected according to any predefined quality criteria. It is up to the user to decide whether the guideline comes from a reliable source and to consult the full guideline, if needed, to review the process through which it was developed.

You click on the Redi-Reader icon on your handheld and then on the Clinical Guidelines Handbook. In the Table of Contents you click on "Neurology," under which there are 5 sections, including "Migraine Headache." This section is divided into "Guideline Source," "Background," and "Treatment." You decide that it is extremely important to know the source of the recommendations. "Guideline Source" reveals that these are summaries

of the U.S. Headache Consortium Evidence-Based Guidelines for Migraine Headaches published by the American Academy of Neurology (2). You don't have time to retrieve and critically appraise the guidelines in their original form, but decide to use them. Within the guideline, you click on "Treatment," which is divided into the sections "General Goals," "Non-pharmacologic," "Acute Treatment," and "Preventive Treatment." The priority for your patient is relieving the current headache, and you find that there are several subsections under "Acute Drug Therapy," including "General Principles." From here you learn that the National Headache Consortium recommends migraine-specific agents (serotonin-receptor agonists [triptan] and ergotamine) for severe headaches or those that respond poorly to nonsteroidal anti-inflammatory drugs.

### APPLICATION

You decide that the patient may benefit from treatment with a serotonin-receptor agonist, given their safety and effectiveness. The guidelines recommend the intranasal or subcutaneous route of administration if the patient is nauseated and vomiting frequently. It is also recommended that an antiemetic be used to alleviate nausea. Metoclopramide is available in your office and can be administered intramuscularly. You note that you have spent just 2 minutes consulting the Guidelines Handbook on your handheld computer.

The ePocrates Drug Database Program is also loaded on your handheld computer. You look up sumatriptan, and since it is readily available in the pharmacy near your office, you subsequently write a prescription for two 5-mg inhalers of sumatriptan, the second to be used if the patient's headache does not subside after the first dose. You also administer 10 mg of metoclopramide intramuscularly. The patient begins to feel much better within an hour. You ask her to use the second dose if needed, and to return to discuss her problem further or if she has additional headaches.

### EVALUATION

Greater emphasis on evidence-based medicine and the impossible task of absorbing volumes of original research, improving the quality of care, and reducing unnecessary variation in care combined with a desire to control health care costs have all led to a staggering proliferation of practice guidelines (3). However, these guidelines have not had much impact on physician behavior for several reasons (4), including lack of knowledge about or a negative attitude toward guidelines among physicians as well as environmental factors, such as the way guidelines are distributed.

Ideally, practice guidelines should be available at the point-of-care in a form that is quick and easy to digest. Handheld computers could make guidelines more practical to use. Physician use of handheld computers for many applications, including drug reference databases, is growing rapidly. 15% of physicians in the United

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States used handheld computers in the clinical setting in 1999. By 2001, this number grew to 26% (5). Growth is expected to accelerate as the range of medical applications for handheld computers increases (6). More evidence-based resources need to be made available for these devices. Handheld devices have received a warm reception among physicians. Hopefully the millions of dollars spent on developing practice guidelines will start to pay off as physicians begin to rediscover them beneath a little icon on their handheld computers.

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#### **References**

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