

MANAGEMENT OF CHRONIC DAILY HEADACHE: CHALLENGES IN CLINICAL PRACTICE*

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ABSTRACT

Chronic daily headache (CDH) is a chronic disease that presents challenges related to patient and disease variables. Patient variables include extent of knowledge concerning chronic headache, treatment expectations and preferences, tolerance for pharmacologic side effects, and adherence with a treatment plan. Duration and severity of CDH and the presence of comorbid diseases are important disease variables. Psychiatric disease may result in behaviors that are counterproductive to following a treatment plan. Other medical illness may significantly impact pharmacologic therapy. Management includes pharmacologic and nonpharmacologic treatment. Many patients will try complementary and alternative medicine modalities, such as relaxation training, biofeedback, cognitive-behavioral therapy, acupuncture, and herbal therapies. This article will review these modalities, patient and disease variables that impact treatment, and measures to improve adherence to a treatment plan.

PATIENT VARIABLES

Patients with chronic daily headache (CDH) bring their values, beliefs, and expectations to the office. Almost all patients are looking for the basic cause of headache and often have difficulty accepting CDH as

a diagnosis. Fears concerning brain tumors, aneurysms, blood clots, and the like are often just under the surface for many patients. It is here that the clinician can make a tremendous impact. Listening carefully to the history and attending to the physical examination reassures the patient that the diagnosis is secure. Explanation of the diagnosis, education, and referral to quality information, such as the patient education Web site of the American Council for Headache Education,¹ are critical elements of the initial evaluation. Patients may have strong preferences for certain treatments. Most patients readily accept prescription medications, whereas others will prefer complementary and alternative medicine modalities, such as acupuncture, massage, herbal and vitamin preparations, biofeedback, cognitive-behavioral therapy (CBT), chiropractic treatments, and other physical treatment modalities. It is the clinician's role to help the patient evaluate these treatments and incorporate them into the treatment plan.

DISEASE VARIABLES

Comorbid diseases may significantly influence the treatment plan. Psychiatric disease has been discussed in a previous issue of *Johns Hopkins Advanced Studies in Medicine*.² Briefly, the prevalence of depression and generalized anxiety disorders are 3 times more common in persons with migraine than among the general population.³ There are sparse data about the CDH population; however, it appears that the frequency of headache may predict psychiatric comorbidity, particularly in patients with chronic migraine (CM). Juang et al found that 78% of patients with transformed migraine (TM) and 64% of patients with chronic tension-type headache (CTTH) had a psychiatric diagnosis, such as major depression, dysthymia, panic disorder, and generalized anxiety disorder.⁴

Untreated psychiatric conditions may result in noncompliance with the headache treatment plan

*This article is based on a roundtable symposium held in Miami, Florida, on March 18, 2006.

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because of low energy, poor concentration, feelings of hopelessness—all symptoms of depression and dysthymic disorders. Examples of other medical illness that impact CDH pharmacologic treatment include asthma, in which β blockers may exacerbate an attack, kidney stones, which may preclude the use of certain antiepileptic drugs, and obesity, which may preclude the use of valproic acid and tricyclic antidepressants. Obesity may favor the use of topiramate because weight loss is not uncommon with this agent. Pregnancy and breast feeding complicate treatment because the risk to the fetus or baby becomes paramount. Lengthy counseling concerning the risks and benefits of treatment will be required.

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Treatment strategies fall into 2 major categories: pharmacologic and nonpharmacologic, the latter also frequently called complementary and alternative medicine (CAM).

PHARMACOLOGIC THERAPIES

Pharmacologic therapies for CDH include preventive therapies and acute attack medications. Commonly used preventive medications are included in Table 1. A few strategies to increase the chance of success are:

- Choose the most effective medication taking into account the patient's comorbid conditions.
- Start at a low dose and increase gradually to avoid side effects.
- Have a target dose and plan to continue at that dose for a minimum of 6 to 8 weeks because many preventive medications take that long to be effective.
- Make sure the patient understands that the medication will be taken for a prolonged period, perhaps indefinitely, as few patients are "cured" of CDH.
- Make sure the patient understands that even on preventive medication, headaches will occur and acute medications will be necessary.

Acute medications are problematic when dealing with a patient with daily or near-daily headache. Decisions have to be made about which headaches to treat, and clear limits on each medication have to be set. Some patients with CDH convert from episodic to

daily headache while on acute medications by exceeding guidelines for number of days a week to treat. Medication overuse headache is defined as headache occurring 15 or more days a month with intake of the offending agent for 15 days (ie, simple analgesics) or 10 days (ie, triptans, opioids, ergotamine, or combination agents) for more than 3 months, and the headache resolves or reverts to the previous pattern after discontinuation.⁵ An easy rule of thumb for the patient is: do not take acute medication more than 2 days a week. This is not so easy to operationalize because the patient may have 5 severe headache days 1 week, treating each headache, and milder headaches the following week treating none. For these patients, looking at the total number of headaches for the month is more practical.

COMPLEMENTARY AND ALTERNATIVE MEDICINE

A recent headache clinic based study by Rossi et al⁶ reported that 31.4% of the 481 patients with migraine surveyed had used CAM therapies, and these therapies were considered beneficial by 39.5% of the patients who used them. Patients with TM were more likely to report lack of benefit as compared to patients with episodic migraine (50.7% vs 73.1%, $P < .001$). Patients sought CAM as a potential treatment for the headache disorder. Of note, 61% of patients using

Table 1. Commonly Used Preventive Medications

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|--------------------------------------|
| Antiepileptic drugs |
| Valproate |
| Topiramate |
| Gabapentin |
| β blockers |
| Propranolol |
| Metoprolol |
| Timolol |
| Calcium channel blockers |
| Verapamil |
| Tricyclic antidepressant drugs |
| Amitriptyline |
| Nortriptyline |
| Nonsteroidal anti-inflammatory drugs |
| Naproxen |
| Acetylsalicylic acid |
| Fenoprofen |
| Ketoprofen |

CAM did not tell their doctors they were using CAM.⁶ It would appear from this study that patients are seeking alternatives to traditionally recommended treatments (primarily medications) and often do not inform their doctors of the treatment.

What is the evidence for CAM in CDH?

Complementary and alternative medicine has not been studied in CM and for CTTH, the data are sparse. The US Headache Consortium reviewed CAM in migraine and developed evidence-based guidelines for behavioral and physical treatment in migraine. After reviewing randomized, controlled trials and prospective, comparator trials, with data available that captured the number of patients achieving at least a 50% reduction in headache index frequency or severity, the following recommendations were made:

- Relaxation training, thermal biofeedback/relaxation training, electromyogram biofeedback, and CBT “may be considered as treatment options for prevention of migraine (Grade A evidence).”
- Behavioral therapy (eg, relaxation or biofeedback) “may be combined with preventive drug therapy (ie, propranolol or amitriptyline) for patients to achieve additional clinical improvement for migraine relief (Grade B evidence).”
- Evidence-based treatment recommendations cannot yet be made for the use of hypnosis, acupuncture, transcutaneous electrical nerve stimulation, cervical manipulation, occlusal adjustment, and hyperbaric oxygen for the preventive treatment of migraine.⁷

Acupuncture

Several studies with substantial heterogeneity of design for acupuncture treatment of headache are in the literature with conflicting results. A sham-controlled study by Alecrim-Andrade et al in patients with migraine showed a 40% to 50% reduction of migraine frequency, duration, use of rescue medication, and headache severity, which was not different in the 2 treatment groups.⁸ Similar results were found in a multicenter randomized controlled trial by White et al with similar design in episodic tension-type headache (ETTH).⁹ A recent large study of acupuncture in primary headache disorders by Melchart et al reported statistically significant “clinically relevant” improvement with at least a 50% reduction of headache frequency. The patients with CTTH had less benefit than

patients with migraine or ETTH.¹⁰ In a randomized controlled study by Coeytaux et al of 74 patients with CDH, acupuncture-added to medical management was compared to medical management alone. Although the 2 groups did not differ in daily pain severity scores, the acupuncture added group showed improvements in quality-of-life measures and were 3.7 times more likely to report less suffering from headaches at 6 weeks.¹¹

Physical treatments

The evidence for physical therapy, massage therapy, and chiropractic manipulation for headache was reviewed by Biondi. There was “only modest support” for the use of these therapies in headache and then only in limited situations. Physical measures appeared to be most beneficial when combined with an exercise plan.¹²

Behavioral treatments

These modalities include relaxation training, biofeedback, CBT, and stress management. Improvement of 35% to 55%, which is superior to control treatments or control waitlist status, has been reported in meta-analytic reviews in episodic headache disorders (migraine and tension-type). Control of triggers of migraine episodes is addressed, and the goal is prevention of headache. Improving coping strategies is stressed. Training sessions are necessary by psychologists or other healthcare personnel knowledgeable in the techniques. Some patients may not have the resources or willingness to undergo behavioral treatment.¹³

Herbal treatments

Several vitamins, minerals, and herbals are commonly used for headache prevention. These agents are considered of lower efficacy, with limited strength of evidence, and have mild-to-moderate side effects as defined by the US Headache Consortium Guidelines. The herbal remedy, feverfew, is widely used for headache, but a Cochrane database review in 2004 did not show significant superiority to placebo.¹⁴ Although magnesium and riboflavin (vitamin B₂) have potential benefit and minimal adverse effects, studies consist of small trials. One trial of magnesium with 81 patients reported a significant reduction in attack frequency.¹⁵ A multicenter trial by Pfaffenrath et al was stopped after interim analysis of 69 patients because of no difference between the magnesium and placebo group.¹⁶ The positive trial conducted by Schoenen et al for riboflavin, on which widespread use has resulted, con-

sisted of 55 patients.¹⁷ Acceptance of herbals with such limited “evidence” reflects the benign nature of the products, low cost, and nonprescription status. More recently, *Petasites hybridus* root (butterbur) has been studied in a randomized controlled trial in 245 patients with migraine. *Petasites hybridus* at a dose of 150 mg a day was superior to placebo after 4 months of treatment.¹⁸

MEASURES TO INCREASE ADHERENCE TO A TREATMENT PLAN

Patient compliance is generally now referred to as adherence to emphasize the patient’s active role in following a treatment plan. For a patient to adhere to a treatment plan, the patient has to understand the illness, the options available, the risks and benefits of the recommendations, and have the resources and desire to implement the plan. Reasons for failure to adhere to

a treatment plan include lack of communication, psychosocial and cultural factors (eg, economics, cost of treatment, or beliefs about illness), and medical/psychiatric factors (eg, side effects of treatments, cognitive impairment, or depression and other psychiatric disease that interferes with motivation).¹⁹ Patients seeking treatment for CDH may have unrealistic expectations of cure and need education about the chronic nature of CDH and the need for management over the long haul. Patients may think that a preventive medication will only need to be taken for several weeks. Clear communication about the goals of treatment (ie, reduction of headache frequency and severity) and the duration of treatment (usually a minimum of 6–9 months) is essential for the patient to adhere to the plan. Ways to improve adherence are listed in Table 2.

CONCLUSIONS

The treatment of CDH is challenging. Pharmacologic treatments have limited or no benefit for many patients. CAM treatments are tried and considered beneficial by many patients with headache. Patient beliefs about illness and expectations are varied. Realistic goals have to be set. The healthcare practitioner has to make the correct diagnosis and provide education for the patient about headache and its treatment. Measures to improve adherence include a written plan using the simplest dosing schedule of medications and clear instructions about adjustment of lifestyle measures, such as diet and sleep. CDH is a chronic disease and regular follow-up appointments are critical to successful management.

Table 2. Ways to Improve Adherence

- Provide clear, written instructions. When regimens are used repeatedly, printing up the instructions reduces duplication of effort. A copy of the instructions should remain in the chart for review on the subsequent visit. Categorize instructions so that acute and preventive medications are together and the dietary/sleep instructions are together. Be explicit. For example, instruct the patient to “limit caffeine to 2 8-oz servings/day,” rather than “cut down your caffeine.”
- Use the simplest dosing schedule possible by using medications that can be dosed once or twice a day. For example, use timed-release β blockers for once-a-day dosing. Adherence decreases with the number of times a day the patient has to dose. Encourage the use of pill boxes that are loaded once a week.
- Discuss side effects, and when possible put the most likely side effects on the instructions.
- Ask about pharmacy coverage. Prescribing a costly medication when the patient has no resources to obtain the treatment is futile. The patient may be too embarrassed to bring this up.
- Ask the patient what worries him or her, and whether the plan makes sense to the patient.
- Schedule the follow-up visit within 4–6 weeks. If you wait too long, the patient may run into side effects or give up when results are not immediate. The follow-up visit allows you to review the progress, the plan, and revise it as necessary.
- Remain open minded about patient’s concerns. Engaging the patient’s trust is critical to long-term success.

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