Acute Migraine Therapy: Do Doctors Understand What Patients With Migraine Want From Therapy?

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With a better and more diverse armamentarium than ever before, physicians can now select migraine therapy to satisfy the preferences of migraine sufferers, provided physicians understand what migraineurs want from therapy. To determine patient preferences and priorities, individuals with migraine were identified by a random-digit telephone survey during 1998. These individuals were polled regarding their consultation practices, treatment preferences and priorities, and factors affecting their satisfaction with migraine care. At a subsequent satellite symposium at a meeting of the American Association for the Study of Headache (AASH), attendees were asked to predict the responses of migraine sufferers; responses of migraine sufferers and health care professionals attending the meeting were then compared. Of the 688 migraine sufferers identified in the telephone survey, 46.7% currently consulted physicians regarding migraine, while 20.6% had consulted at some time but not during the past year, and 32.3% had never consulted a physician regarding migraine. While most (77%) patients were satisfied or very satisfied with current medications, those who were not completely satisfied complained that pain relief took too long (87%), was inconsistent (84%), or that the pain recurred (71%). Only 35% complained of side effects. The three most important attributes of a migraine medication (according to migraine sufferers) were complete relief of pain (87%), lack of recurrence (86%), and rapid onset of pain relief (83%). The majority of migraine sufferers preferred an oral tablet or capsule as a first-choice route of administration (73%) and an oral, rapidly dissolving tablet as a second-choice route (51%). Attendees of the AASH meeting closely anticipated these patient responses about medications. The physician attribute most highly valued by patients was willingness to answer questions (86%), which was not anticipated by AASH attendees.

Key words: migraine, treatment attributes, patient preferences, epidemiology, telephone survey, route of administration, physician attributes

The expanding therapeutic armamentarium for migraine provides an unprecedented range of treatment choices both for doctors and for patients. As therapeutic options become more diverse, it becomes more important to understand patients’ attitudes and preferences regarding various treatment characteristics. Selecting among treatments requires an evaluation of efficacy and safety; optimizing treatment also requires an assessment of how well alternative treatments meet patient needs and expectations for rapid relief of pain, completeness of pain relief, lack of side effects, low recurrence rate, ease of administration, etc. Failure to understand patient preferences may reduce adherence and discourage patients from continuing treatment. A thorough understanding of an individual patient’s expectations for migraine treatments will help physicians match treatments to their patients’ needs. This should improve the chances for successful migraine management. From a societal perspective, patient expectations should be considered early in the drug development process to ensure that medications selected for development meet treatment needs.

Despite the extensive data on epidemiology and
health care use for migraine, few systematic data have been collected on what patients with migraine want from their health care providers and from their medications. Even less is known about physician perceptions of patient needs. Packard pioneered such research in migraine therapy 20 years ago, long before triptans emerged as a standard in treatment.

To better understand patients’ expectations, we conducted a survey in a representative sample of migraine sufferers in the United States. To assess how well providers understood the expectations of migraine sufferers, we asked attendees at the annual meeting of the American Association for the Study of Headache ([AASH], San Francisco, 1998) to predict the preferences of patients with migraine expressed in this survey.

METHODS
A representative sample of US households was identified by a random-digit dial survey conducted during 1998. Interviews were initially conducted with 5094 individuals using a computer-assisted telephone interview (CATI) designed to identify migraine sufferers based on International Headache Society (IHS) criteria. The CATI has been validated using clinical assessment as the criterion standard and has very high sensitivity and specificity. In addition to demographic characteristics, migraineurs were asked about their health care behavior, satisfaction with current treatments, as well as their preferences for various treatment and physician characteristics. Survey questions and response options are partially summarized in the Appendix.

A subset of related questions were asked of a group of 167 physicians, clinicians, and scientists attending an educational symposium on migraine held at a meeting of AASH in 1998. Responses were gathered using a computerized audience response interactive keypad system. In addition to providing demographic data, participants were asked to predict how patients would answer the following questions: (1) Among migraine sufferers not completely satisfied with their usual acute medication, what is the most important reason for their dissatisfaction? (2) What do you think migraine sufferers said were the most important features of an acute migraine medication? (3) What do you think migraine sufferers selected as their first/second choice for a route of administration for an acute migraine treatment? (4) Which of the following qualities did migraine sufferers currently seeing a doctor say were most important to them in a doctor treating their headaches? Due to the limitations of the audience response system, participants could only choose one response to each question. Migraine sufferers were often asked to rate the importance of a number of terms. Despite differences in format of response options, qualitative comparison of results helps assess how well those involved with patients understood what migraine sufferers wanted from their treatments and from their clinicians.

RESULTS
Demographics.–Based on modified IHS criteria, 688 individuals with migraine were identified, yielding a 1-year period prevalence of migraine of 18.4% in women and 5.9% in men. The mean age of the sample was 43 years (range 18 to 65 years). The migraine group showed the expected preponderance of females (84%). Although most participants were Caucasian (83%), there was also a sizable sample of African Americans (8%) and other racial groups.

Of the 136 health care professionals responding, 85 were physicians. Among physicians, specialties included neurologists (68%), family/general practitioners (11%), internists (6%), and other physicians (14%). The non-physicians included pharmacists, doctors of pharmacy, pharmacologists, psychologists and other mental health professionals, as well as nurses. The primary place of work for all attendees included office-based practices (28%), medical schools or other academic institutions (18%), pharmaceutical manufacturers (17%), headache subspecialty centers (16%), hospital-based medical practices (12%), contract research organizations (2%), managed care organizations (1%), and other environments (7%). The most prevalent age range comprised 40- to 49-year-olds (34%), with an approximately normal distribution around that age group. Sixty-four percent of the group were men.

Physician Consultation.–Migraine sufferers were asked whether they had ever seen a doctor specifically for migraine and when, if ever, they had last seen a doctor specifically for headache. Those who had ever consulted were divided into two groups: current consulters had seen a doctor for headache within the last year, lapsed
consulters had seen a doctor specifically for headache, but not within the last year. Almost half (46.7%) of the migraine sufferers were current headache consulters. Lapsed consulters comprised 20.6% of the sample, and about one third (32.3%) had never consulted a doctor for their headaches.

Of the individuals who had never consulted a doctor, 52% indicated that their headaches were not that bad, and 50% said that they had a treatment option that worked. These individuals may have been satisfied with their current condition. However, 42% of those with headaches said there was nothing a doctor could do, 41% said that seeing a doctor was too inconvenient, and about one third (32%) said seeing a doctor was too expensive. For the lapsed consulters, 65% said they had not seen a doctor for the past year because the prescribed treatment was working, and 59% said the headaches had improved (less frequent or less severe). Conversely, 26% of lapsed consulters said they were no longer seeing a doctor because there was nothing a doctor could do for their migraine, 20% indicated that their doctor did not help them, and 15% said their doctor was not interested in headache.

**Treatment Attributes.** Migraineurs were asked how satisfied they were with their usual acute treatment for migraine. Only 29% indicated they were very satisfied, while 48% were somewhat satisfied. Seven percent were neither satisfied nor dissatisfied, 9% were somewhat dissatisfied, and 7% were very dissatisfied.

Migraineurs who were less than completely satisfied with their treatment were asked about the important reasons for dissatisfaction with their usual acute medications (Figure 1). The most frequent reason for dissatisfaction (87%) was that pain relief took too long. When asked “how long a rapidly acting tablet” should take to “satisfactorily relieve migraine pain,” 71% responded less than 30 minutes, 21% responded 31 to 60 minutes, and the remainder selected longer time intervals. Incomplete or inconsistent pain relief were important issues for 84% of individuals. Headache recurrence was an important reason for dissatisfaction for 71% of subjects, and side effects were an issue for only 35% of subjects. Attendees at the AASH meeting predicted the following responses to this question: medication doesn’t relieve the pain completely, 44%; pain relief takes too long, 26%; headache recurs, 23%; and too many side effects, 7%.

Migraine sufferers were asked to rate the importance of various attributes of acute migraine treatment (Figure 2). The attribute most commonly selected as important or very important was complete relief of head pain (87%). Lack of recurrence (86%) and rapid onset of pain relief (83%) were, however, also rated as important or very important by the majority of patients. Less highly rated attributes were: no side effects (79%), relief of associated symptoms (76%), and route of administration (56%). Meeting attendees selected the single attribute they predicted would be most important to migraine sufferers. They correctly predicted that migraine sufferers would select rapid onset of pain relief (53%) and complete pain relief (42%) as important attributes. Meeting attendees predicted that recurrence (3%), route of administration (1%), relief of associated symptoms (1%), and lack of side effects (0%) would not be highly rated.

**Route of Administration.** When asked about their preferred route of administration for acute migraine
therapy, 73% of migraineurs selected tablets or capsules that needed to be taken with water as their first choice (Figure 3A). An oral, rapidly dissolving tablet that dissolved on the tongue was selected as the first choice by 15% of subjects, followed by nasal spray (8.3%), and subcutaneous injection (2.6%). The second choice for route of administration was a rapidly dissolving tablet (51%), nasal spray (26%), tablet (17%), and subcutaneous injection (3.5%) (Figure 3B). When nausea makes it difficult to take a tablet, 73% felt it was important or very important to use a rapidly dissolving tablet. Clinicians predicted tablets or capsules to be the first choice for route of administration (67%), followed by rapidly dissolving tablet (23%), nasal spray (7%), and subcutaneous injection (3%) (Figure 3A).

For second choice route of administration, they predicted rapidly dissolving tablet (40%), nasal spray (32%), tablet or capsule (22%), and subcutaneous injection (6%) (Figure 3B).

**Physician Attributes.** Respondents who were currently consulting a physician for their migraines were asked about physician attributes that were very important to them (Figure 4). The most frequent response was willingness to answer questions (86%). Next in order of importance were: teaches how to treat attacks (72%), educates about causes of migraine (72%), teaches how to avoid headaches (69%), and medical expertise in diagnosis and treatment (67%). The attribute rated as very important least often was understanding/compassionate (61%). In contrast, AASH attendees thought medical expertise (28%) and understanding, warmth, and compassion (25%) would be considered the single most important attributes. Willingness to answer questions (15%) and educating the patient about causes of migraine (16%) were next in order of importance, followed by teaching patients how to treat acute attacks (13%) and teaching patients to avoid headaches (2%).

**COMMENTS**

Despite the suggestions that migraine prevalence may be increasing, three large US studies conducted by the same research group in 1989 and 1994, as well as the present study in 1998, do not support these trends. Across these three studies, the 1-year period prevalence of migraine has been remarkably stable at about 18% in women and about 6% in men. The report that migraine prevalence was increasing was based on a question on self-reported migraine. Perhaps the apparent increase in migraine prevalence reflects increased migraine awareness and increased consultation. The present study also generated the expected sex ratio with a 3:1 female preponderance.

While the epidemiology of migraine has remained relatively constant in the United States over the last decade, self-reported consultation patterns have changed dramatically. The proportion of patients consulting a physician for migraine has increased dramatically during the last decade. In 1989, only 16% of migraine sufferers in the United States reported having seen a doctor for headache within the last year. In this survey, 47% of migraineurs report having consulted a doctor within the last year. This increase in consultation rates coincides with the increase in awareness and consultation.
with efforts to increase awareness of migraine through professional and lay organizations (AASH, American Council on Headache Education [ACHE], National Headache Foundation [NHF], magazine and newspaper articles, and extensive direct-to-consumer advertising).

Of the migraine sufferers who had never consulted a physician for migraine, 50% indicated that they had an effective self-treatment option. As over-the-counter medications have proven efficacy for less disabled migraine sufferers,11,12 many of these individuals may well have their treatment needs met. However, only 29% of migraine sufferers were fully satisfied with their current treatments. Over-the-counter treatments fully meet the treatment needs for some migraine sufferers.

It is important to remember, though, that satisfaction with migraine therapy is dependent on expectations. Patients with low expectations may be satisfied with a relatively ineffective medication that takes the edge off the pain, while leaving significant levels of disability. Increased awareness of treatment alternatives might raise expectations. Forty-two percent of respondents never consulted a physician for migraine because they believed there was nothing a doctor could do for their headaches. In a world of emerging treatment options, this group may well have their treatment needs met. However, only 29% of migraine sufferers were fully satisfied with their current treatments. Over-the-counter treatments fully meet the treatment needs for some migraine sufferers.

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The lapsed consulter group was defined by medical consultation for headaches at some point, but none for the last year. Of these individuals, most (65%) had found an effective treatment. Presumably, some of these individuals were getting prescription refills without physician visits over the last year. While some individuals of this group may have their treatment needs met, the issues of expectations and satisfaction remain. Further, 25% of those who had lapsed from care did so because they felt there was nothing the doctor could do, suggesting substantial unmet treatment needs in this group. As treatment improves, many of these individuals might benefit from consultation.

Only 29% of migraine sufferers were very satisfied with their usual acute treatment for migraine, while 48% were somewhat satisfied. High proportions of migraine sufferers (77%) are at least somewhat satisfied with their migraine therapy. Conversely, 71% of patients indicated less than complete satisfaction. Common reasons for dissatisfaction included pain relief that was incomplete or that took too long. Migraine sufferers and clinicians were asked different kinds of questions in this study. Migraine sufferers were asked to independently rate the importance of a series of reasons, items, or attributes. Because of limitations in the interactive keypad system, AASH attendees were shown the same list but asked to select the best single response. Thus, direct, numerical comparisons are misleading, though the order of rankings are informative. Meeting attendees correctly identified that incomplete pain relief and that delayed pain relief were important reasons for dissatisfaction with medication.

We also examined desirable attributes of an acute migraine medication. Of all items assessed, migraineurs were most likely to select complete pain relief (87%) as important or very important. Other important attributes of an acute migraine medication were rapid onset of pain relief and lack of recurrence. Overall, these data suggest that efficacy is very important to migraine sufferers and that a broad range of attributes are very important. Migraine sufferers have high expectations for their treatment. Meeting attendees were generally good at predicting patient responses to this question, indicating an awareness of the expectations and priorities of migraine sufferers.

In this study, we asked migraine sufferers to describe their treatment needs and reasons for dissatisfaction. An alternative approach is to measure satisfaction in a clinical trial and examine the attributes of treatment response that predict satisfaction. Santanello and coworkers took that approach in analyses performed on data from two clinical trials.13 They modeled satisfaction 2 hours after treatment.
using clinical trial endpoints during the 2-hour postdosing period as prediction variables. The analyses showed that complete pain relief within 2 hours is a powerful determinant of satisfaction with treatment. For migraine sufferers with incomplete pain relief, satisfaction is higher if relief begins within the first hour and if associated symptoms are relieved.13

This convergence of results based on two independent approaches suggests that treatments that provide complete pain relief and rapid onset of pain relief are most likely to meet the needs of patients with migraine. The data support the suggestion of the IHS that a pain-free endpoint is appropriate in migraine clinical trials (Peer Tfelt-Hansen, MD, written communication, July 1, 1999) and approaches that attempt to measure the time to onset of pain relief.

Over half of migraine sufferers considered route of administration as an important or very important attribute of treatment. The vast majority of patients selected oral tablets/capsules as their first choice route of administration for migraine. A rapidly dissolving oral tablet was the second most common first choice and the most common second choice route of administration. Participants in this survey had never taken a rapidly dissolving tablet for migraine. The only such tablet currently available is a formulation of rizatriptan (MAXALT-MLT) which was approved by the FDA in mid 1998.14 Nasal sprays followed rapidly dissolving tablets in terms of patient preferences. Three migraine therapies are currently available as nasal sprays: sumatriptan (Imitrex), dihydroergotamine mesylate (DHE, Migranal), butorphanol tartrate (Stadol NS). Oral rapidly dissolving tablets and nasal sprays are important treatment options for patients, especially if nausea is prominent. Not surprisingly, injectables were relatively low in terms of patient preference. Meeting attendees demonstrated an excellent understanding of the preferences of migraine sufferers for various routes of administration.

For migraine sufferers who had consulted a physician for migraine, the most frequent choice for a very important physician attribute was a willingness to answer questions (86%). Patients also wanted to be educated about the causes of migraine attacks and how to treat them. Medical expertise was important to a smaller group (67%). Patient education about migraine was also an important attribute. The two attributes chosen least often by patients (medical expertise and understanding, warmth, compassion) were chosen most often by clinicians. This discrepancy suggests that although clinicians have a fairly good understanding of what migraine sufferers want from their medications, they do not have a good appreciation for what patients expect from their physicians.

Acknowledgments: This study was supported by Merck, Inc. Appreciation is expressed to Toni Gugliermo for assistance in preparing the manuscript.

Appendix.–
Survey Questions and Response Options

1. Consultation Status
   • Current consulter (had seen a doctor for migraine within the last year)
   • Lapsed consulter (had seen a doctor for migraine, but not in the last year)
   • Never consulted (had never seen a doctor specifically for a headache disorder)

2. Reasons for Never Consulting a Doctor
   • Headaches not that bad
   • Self-treatment works
   • Nothing doctor can do
   • Too inconvenient/no time
   • Too expensive

3. Reasons for Lapsing From Care
   • Doctor’s treatment worked
   • Headaches less frequent, less severe
   • Nothing doctor can do
   • Doctor didn’t help
   • Doctor not interested in headache

4. Satisfaction With Usual Acute Treatment
   • Very satisfied
   • Somewhat satisfied
   • Neither satisfied nor dissatisfied
   • Somewhat dissatisfied
   • Very dissatisfied
5. Reasons for Dissatisfaction With Own Usual Medications (Rated From “Not at all Important” to “Very Important”)
   • Pain relief takes too long
   • Doesn’t relieve all pain
   • Doesn’t always work
   • Headache comes back
   • Too many side effects

6. Very Important Attributes of an Acute Migraine Treatment (Rated From “Not at all Important” to “Very Important”)
   • Complete pain relief
   • No recurrence
   • Rapid onset
   • No side effects
   • Relief of associated symptoms
   • Route of administration

7. Preferred Route of Administration (First Choice, Second Choice)
   • Subcutaneous injection
   • Tablet
   • Oral, rapidly dissolving tablet
   • Nasal spray

8. Very Important Physician Attributes (Among Subjects Currently Consulting a Doctor for Migraine Treatment, Rated From “Not at all Important” to “Very Important”)
   • Willing to answer questions
   • Teaches how to treat attacks
   • Educates about causes of migraine
   • Teaches how to avoid headaches
   • Medical expertise
   • Understanding/compassionate

REFERENCES