

## DISTINGUISHING "SINUS HEADACHE" FROM MIGRAINE HEADACHE\*

Roger K. Cady, MD<sup>†</sup>ABSTRACT

Despite the insight provided by the International Headache Society (IHS) criteria for diagnosing various headache disorders, patients receive most of their information on headache via direct-to-consumer advertising. As a result, the reports of "sinus headache" by patients are unusually high. This occurs despite the fact sinus headache is relatively rare and patients have a diagnosis of migraine from their physician. Headache symptoms to the nonheadache specialist can appear vague, and nasal congestion and sinus pain may be symptoms of migraine. This study sought to identify the symptoms most often associated with sinus headache versus those associated with migraine in patients with physician diagnoses of migraine but who self-report "sinus headache." The results show that the constellation of symptoms is similar for both conditions, with gastrointestinal symptoms playing a larger role in migraine and weather having a more pronounced impact with sinus headache. Interestingly, patients treating their sinus headaches with sumatriptan experienced significant relief, yet many patients continued to obtain prescription sinus medications from their physi-

cians to treat their headaches. It is not known if sinus headaches represent a new or distinct form of headache, however, they should not be discounted during the diagnosis process since the IHS criteria do not include nasal symptoms in the diagnosis of migraine.

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**T**he International Headache Society (IHS) criteria for different types of headache have helped researchers and clinicians to differentiate among the myriad types of cephalgias we experience. For the general public, the information about headache diagnosis is often and most forcefully communicated through direct-to-consumer advertising of over-the-counter products for headache and allergy relief. Headache symptoms to the nonheadache specialist can appear vague and discordant. For example, nasal congestion and sinus pain may be symptoms of migraine, but many patients attribute those symptoms to a "sinus headache," even though sinus headache is reported to be relatively rare, and even when they have a diagnosis of migraine from their own physician.

This study is a continuation of a previous study in which patients with only self-described sinus headache were found to have headaches meeting IHS criteria for migraine without aura (IHS 1.1), migraine with aura (IHS 1.2), migrainous headache (IHS 1.7), and tension-type headache (IHS 2.1).<sup>1,2</sup> In this study cohort, patients with self-described sinus headache also had a

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previous physician diagnosis of migraine. Figure 1 shows the distribution of diagnoses when IHS migraine criteria were applied to symptoms associated with sinus headache.

Underrecognition of migraine in the presence of symptoms other than headache is the subject of recent interest. Merle Diamond recently reported updated data from the American Migraine Study II, showing that “in the presence of certain symptoms or conditions, migraine is likely to be identified as another type of headache.” In her analysis, 70% to 79% of migraineurs with a patient-reported physician diagnosis of sinus headache also had allergies, compared with 42% to 46% of migraineurs without a sinus diagnosis. Similar results were seen with sinusitis. In fact, stuffiness and runny nose often accompany other typical migraine symptoms (eg, photo/phonophobia, nausea), which can mislead both patient and practitioner in determining the diagnosis.<sup>3</sup>

Lipton et al recently reported on the erroneous labels patients use to describe their headaches, and sinus headache was one of the most commonly mislabeled diagnoses found in a survey of more than 23 000 people.<sup>4</sup> Subjects in this study were patients with a physician diagnosis of migraine who also reported “sinus headache.” For inclusion, the diagnosis of migraine did not have to be IHS defined but, in fact, the majority of subjects had headaches meeting IHS criteria. These patients also had never had a “workup” for “sinus headache.” A total of 43 people were enrolled (25 from general headache practice sites and 14 from headache specialty treatment sites); 4 were lost to follow-up. As with other migraine studies, a large majority, 92% (36/39), were female. The key objective was to characterize the clinical symptoms and disability of sinus headache in migraineurs.

Inclusion criteria admitted patients aged 18 to 65 years with a physician diagnosis of migraine, at least a 1-year history of self-described sinus headache, 6 or more sinus headache attacks in the last 6 months, and at least 1 of the following: moderate to severe pain, pain increasing with activity, unilateral pain, nausea and/or vomiting, photo- and/or phonophobia, or pulsating pain.

Exclusion criteria included more than 15 headache days per month and/or fever, purulent discharge, or radiographic evidence of sinus infection

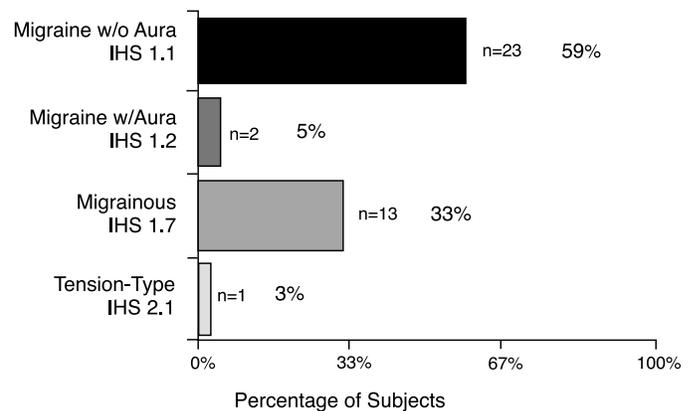
associated with sinus headache in the previous year. Exclusion criteria ruled out any chronic headache syndromes or sinus infection. In fact, chronic headache syndromes were the most common cause for exclusion.

Patients were asked at screening to indicate which symptoms they had during their typical sinus headaches; the results are shown in Figure 2. Of note, 95% of the patients had at least 1 of the nasal symptoms (drainage or stuffiness), and more than half felt that their headaches were weather associated. Disability associated with sinus headaches was significant: 87% reported very severe impact and 13% reported substantial impact based on Headache Impact Test-6 scores at screening.

Patients were also asked at screening to indicate which symptoms they had during their typical migraine headaches. As shown in Figure 3, gastrointestinal symptoms were much more prominent, and the impact of weather on symptoms was less pronounced. The intensity of pain and effect of activity were very similar to those with the sinus headaches.

One intriguing finding is the list of reported physician-prescribed medications for sinus headaches: prescription antihistamine po (n = 8), corticosteroids NS

Figure 1. IHS Criteria at Screening for “Sinus” Headache



IHS = International Headache Society.

(n = 4), antibiotics (n = 2), decongestant plus expectorant (n = 2), prescription antihistamine NS (n = 1), guaifenesin (n = 1), butalbital/acetaminophen/caffeine (n = 1), and cerumen emulsifier (n = 1). Patients who had been treated for sinus infections were excluded, yet these patients were able to procure sinus medications from their physicians, even with migraine diagnoses. This may be due to “curbside consultations” (eg, “Doctor, while I’m here, can you give me something for my sinus congestion?”). More than three fourths of the subjects used over-the-counter analgesics, antihistamines, and/or decongestants. Nonetheless, 50% of the subjects were dissatisfied (ie, very dissatisfied, dissatisfied, or somewhat dissatisfied) with their sinus therapies.

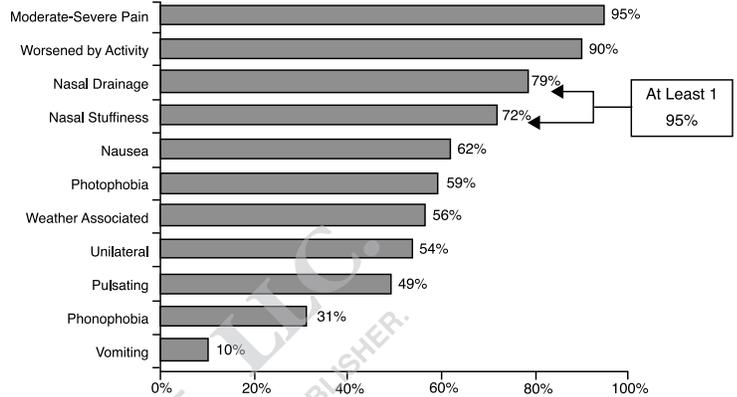
Patients were asked to treat 2 of their sinus headaches with sumatriptan. Of the 66 treated headaches that were moderate or severe, 73% (48/66) had pain relief (ie, moderate to severe pain reduced to mild or no pain at 2 hours), and 45% (30/66) were pain free at 2 hours. Understandably, 64% (25/39) of patients indicated that they preferred sumatriptan to their current sinus headache therapy.<sup>5</sup>

Several physiological mechanisms have been discussed to explain the co-occurrence of migraine headache with sinus symptoms, although this area requires further research.<sup>6</sup> Similarly, it is not known if sinus headaches really represent a unique headache type or if sinus symptoms are premonitory for migraine headaches in some patients. The response of sinus headaches to migraine-specific therapy is also curious. Nonetheless, the clinical implications of sinus symptoms affect both diagnosis and treatment. Sinus symptoms should not automatically exclude a diagnosis of migraine and do not definitively indicate the presence of sinus headache. In fact, IHS criteria do not include nasal symptoms for diagnosis, so their presence could be misleading if these criteria are the sole reference for diagnosis.

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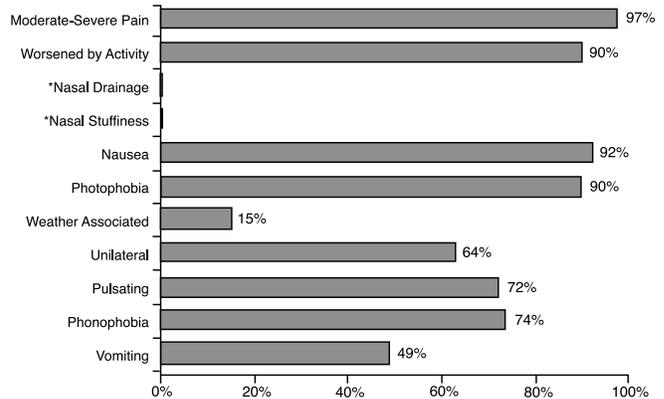
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Figure 2. “Sinus” Headache Symptoms at Screening



n = 39 (subjects may report more than one symptom). Adapted with permission from Cady RK, Schreiber CP. Sinus headache or migraine? Considerations in making a differential diagnosis. *Neurology*. 2002;58 (9 suppl 6):S10-S14.

Figure 3. Migraine Headache Symptoms at Screening



n = 39 (subjects may report more than 1 symptom). \*Data not collected.

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