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Original Research—CME

Headache After Traumatic Brain Injury: A National Survey of Clinical Practices and Treatment Approaches

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Abstract

Background: Individuals with headache after traumatic brain injury (TBI) receive care in a wide variety of clinical locations by physicians trained in multiple specialties.
Objective: To understand current practice patterns and perceptions of treatment issues among clinicians managing headache after TBI.
Design: National survey of current clinical practice using a 20-item questionnaire developed by the authors.
Participants: Survey respondents were members of the Central Nervous System Council list survey of the American Academy of Physical Medicine and Rehabilitation (N = 1782) and the American Headache Society membership (N = 1260).
Methods: The survey was sent electronically to potential participants and was followed by 2 biweekly reminders. The survey queried the physicians' clinical setting; their use of headache classification systems, headache diaries, checklists, and diagnostic procedures; the pharmacologic and nonpharmacologic treatments prescribed; and headache chronicity and associated symptoms and disorders among their patients with TBI.
Results: Completed surveys were received from 193 respondents. The use of standardized classification systems and checklists was commonly reported. Respondents used nonpharmacologic and pharmacologic treatment approaches with similar frequency and modest perceived success rates. A high frequency of headache-associated new sleep and mood disorders was reported. When response differences occurred between practice settings, they reflected a focus on headache diagnosis, classification, and pharmacologic treatment among neurology and specialty headache clinics, whereas a nonpharmacologic approach to management among TBI specialty and general rehabilitation clinicians was more commonly reported.
Conclusion: Management strategies for treating headache after TBI vary widely among general and specialty clinical practices. This suggests that additional research is needed that would lead to an increase in the use of established headache classification and the development of standardized management approaches so that all practitioners who care for patients after TBI can provide consistent effective care.

Introduction

With the current incidence of all traumatic brain injury (TBI) reported to be 558 per 100,000 person-years [1], and the prevalence of chronic headache after TBI estimated to be 58% [2], more than 1 million persons may experience headache after TBI this year in the United States. Despite the development of a widely accepted headache classification system [3], published treatment guidelines for primary headache disorders [4-6], and evidence that chronic headache is associated with high levels of disability [7], there is a paucity of clinical trial evidence that could provide specific guidelines for headache management after TBI [8].

The clinical circumstances of patients with moderate to severe TBI are often complex and associated with surgical procedures, injuries to multiple organ systems, or other chronic health conditions. These patients are usually followed long-term in specialty clinics (eg, rehabilitation, neurosurgery, or neurology). Those with "mild" TBI are commonly treated in primary care settings and are most often referred to specialists in the postacute period for persistent symptoms such as headache. This results in patients with post-traumatic headaches receiving care from a wide variety of clinical providers in many settings. This increases the challenge of developing and providing a consistent, effective standard of care for headache

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management. We recently conducted a multicenter natural history study of self-reported headaches following TBI during the year after injury in subjects with moderate to severe TBI, which showed that headache after TBI occurred in a much larger percentage (41% across the first year after injury) of this population than previously reported [9]. In addition, migraine headache (ie, headaches meeting criteria for primary migraine headache) was the most frequent headache type characterized, occurring in up to 38% of participants who had headache [10]. We also found that headaches occurred more frequently in individuals with mild TBI (up to 91%), although the severity tended to be lower than headaches associated with more severe TBI [11]. With this survey, we sought to gain an understanding of current practices and perceptions among clinicians managing headache after TBI. The results of that survey are reported here, reflecting the variety of clinical settings and treatment approaches among specialty providers and generalists.

Methods

Approval for exempt status was obtained from the University of Washington Institutional Review Board. A 20-question survey of current clinical practice for classifying, evaluating, and treating headache after TBI was developed by the current investigators (the survey is available in the online version at www.pmrjournal.org). The survey was sent to all physicians who had enrolled in the Central Nervous System Council of the American Academy of Physical Medicine and Rehabilitation (a group with special interest in brain and spinal cord disorders, N = 1782 at the time of the survey) and the American Headache Society membership list (whose members are primarily neurologists but include many other specialty areas with an interest in headache treatment, N = 1260 members). This survey was sent electronically to these members, followed by 2 reminders to complete the survey sent biweekly. The survey included questions about the physician's clinical setting; whether standardized headache symptom checklists or classifications were used; the headache classification categories managed in the physician's practice; what percentage of the time patients with headaches also presented with neurologic impairment; diagnostic procedures used to evaluate headache symptoms; pharmacologic and nonpharmacologic treatment approaches used; referral frequency to other specialties; headache chronicity in their practice; concurrent symptoms and disorders among patients served; and, perceived treatment success. No identifying information was collected from those completing the survey beyond their clinical practice setting.

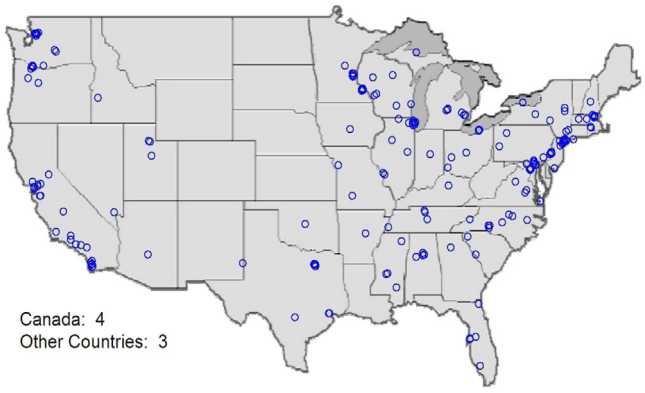

Figure 1. Geographic location of survey respondents. Other countries included Canada (4 responses), the Bahamas, Australia, and Ireland (each 1 response).

Results

A total of 193 physicians responded to the survey. Figure 1 shows survey responses by geographical location. Although the overall number was low, responses were received from 40 states in the United States (n = 186), Canada (n = 4), and single responses each from the Bahamas, Australia, and Ireland. Table 1 provides an overview of respondents by clinical practice type. Practitioners working in specialty headache clinics accounted for the highest percentage of respondents (38%), and general practice neurologists accounted for the smallest percentage (13%).

As shown in Table 2, headache diaries and standardized classification criteria for determining headache type were more commonly used in headache and neurology clinics than in specialty TBI and rehabilitation clinics. Only those respondents working in specialty headache clinics regularly reported use of standardized headache-associated disability measures (eg, Headache Impact Test: HIT-6 [12], Migraine Disability Assessment Test: MIDAS [13]), and few respondents used a TBI symptom checklist in their practices.

As seen in Table 3, TBI patients with objective neurologic impairments were more commonly seen in specialty TBI and rehabilitation clinics, which implies that specialty headache and neurology clinics tend to see more patients with mild TBI. Few diagnostic radiographs, magnetic resonance imaging (MRI), or electrodiagnostic studies were ordered by the respondents, with brain and cervical spine MRIs the tests most

Table 1
Clinic type (n = 193 respondents)

Clinic type	n (%)
Specialty headache clinic	73 (38)
General neurology clinic	25 (13)
Specialty TBI clinic	50 (26)
General rehabilitation clinic	45 (23)