Tension-type headache: Comorbidities are important

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Introduction

Tension-type headache (TTH) is the third most common medical disorder worldwide, behind dental caries and latent tuberculosis infection.[1] It is estimated that in 2016 almost two billion people lived with TTH, and the condition accounted for 7.2 million years of life lived with disability (YLDs). During the same year, one in four South Africans experienced TTH, accounting for almost 47 000 YLDs. Although this is considerably less than the disability associated with migraine (approximately 45 million YLDs worldwide and 271 000 YLDs in SA), it is nevertheless certainly not trivial, especially considering the most affected population is women aged 15 to 49 years, who are likely to be economically active and/or caring for young families.[1]

Despite the high prevalence of TTH and associated disability, the condition is not often regarded as an important clinical entity. Because most people experience occasional headaches, which are not fatal or associated with permanent disability, the debilitating nature of frequent TTH in a relatively large minority of those who suffer from them may go unrecognised.[1] Nevertheless, individuals with chronic TTH are seven times more likely than those without to be classified as impaired on all subscales of applied quality of life surveys.[2] In addition, TTH may be associated with a variety of comorbidities that independently reduce quality of life and impair participation in normal daily activities and work. The relationship between headache and comorbidities is frequently bidirectional, such that one exacerbates the other. Therefore, effective management of TTH is dependent on not only correct headache diagnosis, but also identification of comorbidities that may be amenable to treatment, and without management of which it may be very difficult to improve either headache or quality of life.

The following is a brief review to guide assessment of the patient with TTH to identify common comorbidities and formulate a holistic management strategy for the best outcomes.

Assessment of headache and impact on daily activities

The International Headache Society Classification (ICHD-3) diagnostic criteria for TTH are headache lasting from minutes to days, typically bilateral, pressing or tightening in quality, mild/moderate intensity and not aggravated by routine physical activity. Nausea and vomiting do not occur, but photophobia or phonophobia may be present.[3] According to frequency, TTH is classified as either infrequent or frequent episodic, or chronic as follows:

- Infrequent episodic TTH: ≥10 episodes of headache occurring on <1 day/month on average (<12 days/year);
- Frequent episodic TTH: ≥10 episodes of headache occurring on 1-14 days/month on average for more than 3 months (≥12 and <180 days/year);
- Chronic TTH: Headache occurring on ≥15 days/month on average for >3 months (≥180 days/year).

There are various rating tools that aid in diagnosis and evaluating the severity of headache so that appropriate individualised treatment can be provided. The Headache Impact Test (HIT)-6 is a quick self-rated questionnaire consisting of six items that rate the patient's subjective experience of pain intensity, impact on daily and social activities and mental burden due to headache (Table 1). Each item is scored according to frequency on a five-point scale ranging from "Never" to "Always".[4-8] The HIT-6 may be helpful to differentiate between episodic and chronic headache and a higher score indicates greater impact of headache on daily life.

Table 1. Headache Impact test (HIT)-6[5,8]

Each question is rated on a 5-point scale: Never (6 points), Rarely (8 points), Sometimes (10 points), Very often (11 points), Always (13 points).

1. When you have your headaches, how often is the pain severe?
2. How often do headaches limit your ability to do usual daily activities including household work, work, school, or social activities?
3. When you have a headache, how often do you wish you could lie down?
4. In the past 4 weeks, how often have you felt too tired to do work or daily activities because of your headaches?
5. In the past 4 weeks, how often have you felt fed up or irritated because of your headaches?
6. In the past 4 weeks, how often did headaches limit your ability to concentrate on work or daily activities?

Individual scores for each question are added to obtain a total score ranging from 36 to 78. Total score ≥60 = very severe impact; 56-59 = substantial impact; 50-55 = some (moderate) impact; ≤49 = little to no impact of headache on life.

A headache diary is also useful for patients with more frequent headaches and provides information about the number of days with headache, impact of headache (e.g., missing school or work, reduced productivity, interference with daily activities and social or family activities), medications taken and the effect of treatment.[4,5]

TTH and other headache disorders

Individuals suffering from headaches frequently experience a combination of headache disorders and careful history taking is required to diagnose coexistent headaches subtypes.

Almost all migraineurs have TTH and approximately half experience frequent episodic TTH.[2] Whereas it is likely that migraine triggers TTH, there is little evidence to indicate that the reverse is also true.

Medication-overuse (rebound) headache (MOH) occurs most frequently in patients with primary headaches (TTH and migraine) and is associated with worse pain-related disability.[2,3, 9,10] Diagnostic criteria are listed in Table 2. MOH is an important diagnosis, because epidemiological data indicate that more than half of people with headache on more than 15 days a month have MOH.[10] Frequent use of almost all pain-relieving drugs (in particular triptans, ergotamine, opioids, caffeine, meprobamate and codeine-containing products) can be associated with MOH. Although withdrawal of treatment leads to improvement and evolution to episodic headache in 50-70% of those with MOH, this approach can be quite distressing to some patients, especially those who have been taking daily analgesia for months or years.[9,11] Furthermore, the behaviour of some patients with MOH is similar to that seen with other drug addictions and questioning about regular medication use can be seen as judgemental or provocative.[10,12] Therefore the approach to both screening and drug withdrawal requires careful communication, including reasons for asking about it and withdrawing medication and explanation of anticipated outcomes of the pain management plan.[9]

The Severity of Dependence Scale (SDS) is a validated screening tool for MOH.[12] Because it addresses general dependency-like behaviour rather than drug-specific physical symptoms it may be less threatening than other addiction questionnaires. Lower SDS scores are predictive of a successful outcome from medication withdrawal, whereas higher scores, especially where centrally-acting medications are used, may indicate that the patient may benefit from early referral to specialist and in-patient care. A self-administered version of the SDS (Table 3) correlates well with the interview version and is a useful screening tool for MOH before the headache consultation.[12]

Table 2. Diagnostic criteria for medication-overuse headache[10,11]

A. Headache occurring on ≥15 days/month in a patient with a pre-existing headache disorder

B. Regular overuse for >3 months of one or more drugs that can be taken for acute and/or symptomatic treatment of headache

- Ergotamines, opioids, triptans or combination of analgesics on ≥10 days a month
- Simple analgesics (paracetamol, aspirin and nonsteroidal anti-inflammatory drugs) on ≥15 days a month
- Any combination of the above-mentioned drugs, or one or more medications other than those mentioned above, taken for acute or symptomatic treatment of headache on ≥10 days a month

C. Not better accounted for by another ICHD-3 diagnosis.

Table 3. Self-administered Severity of Dependence Scale (SDS)[12]

1. Do you think your use of [headache medication] is out of control?
2. Does the prospect of missing a dose make you anxious or worried?
3. Do you worry about your use of your [headache medication]?
4. Do you wish you could stop?
5. How difficult do you find it to stop or go without your [headache medication]?

Scoring
Question 1 to 4: never/almost never = 0, sometimes = 1, often = 2, always/nearly always = 3.
Question 5: not difficult = 0, quite difficult = 1, very difficult = 2, impossible = 3.

Psychological stress

Psychological stress is often reported as the most common headache trigger in people with TTH. Although it was previously believed that stress contributed to TTH by aggravating or causing muscle tension, most studies have shown this to be untrue. Rather, it is likely that stress increases pain sensitivity and exacerbates abnormal pain processing in the peripheral and central nervous system. In addition, chronic stress has been shown to cause long-term neuro-inflammation and neuroimmune alterations that may contribute to chronic pain. In addition, psychological effects of stress on pain may include altered attention and vigilance to pain (e.g., reduced pain detection threshold), and effects on pain-related learning and memory and pain reporting behaviour.[13] Consequently, a discussion on perceived stress and stress coping may be of benefit to some patients with TTH, with referral for behavioural intervention if it is considered necessary. Indeed, behavioural treatments (relaxation, biofeedback, cognitive behavioural therapy) have been reported to reduce TTH by up to 50%.[14]

It should be noted that not all patients with TTH report feeling stressed. In a multicenter study carried out in 10 Headache Centers in Italy, psychosocial stress was found in 30% of adult outpatients with TTH.[15] In another study, almost two thirds of people who were given a first diagnosis of TTH spontaneously denied experiencing tension or stress.[16] It has been suggested that, in that instance, the word 'tension' in TTH may actually cause patients to feel stigmatised, labelling them as having poor coping skills or a psychiatric disorder and responsible for their own illness, and subsequently cause them to be reluctant to accept the diagnosis.

Depression and anxiety

Comorbid depression and anxiety frequently occur with chronic pain and the relationship between these factors is bidirectional.[9] Depression and anxiety have been reported to occur in 20% to more than 50% of people with TTH, and those with chronic TTH are 3 to 15 times more likely than matched controls to receive a diagnosis of anxiety or mood disorder.15,17 Depression is moderate or severe in up to approximately 30% of sufferers.[17]

In a large population-based study including more than 2 000 participants, the prevalence of depression and anxiety among people with TTH was double that of those without headache.[18] The prevalence of anxiety increased with increasing frequency of headache, although a similar tendency was not observed for depression. Visual analogue pain scores (VAS) and HIT-6 scores were significantly higher in the presence of anxiety or depression, indicating that these disorders were associated with greater severity of headache and worse impact of headache on daily life.

Sleep

TTH is associated with a variety of sleep disturbances, including insomnia, poor sleep quality (including sleep disruption, early morning awakening and difficulty in falling asleep), excessive daytime sleepiness, insufficient sleep, restless leg syndrome and obstructive sleep apnoea. As is the case with the other comorbidities, the relationship between sleep disorders and headache is bidirectional. Sleep disorders are more common in people with frequent headaches, but are themselves associated with higher headache frequency, progression from episodic to chronic TTH, severe headache intensity, increased impact of headache and higher incidence of anxiety and depression.[19-22]

Effect on daily activities and social life

Considering the impact of frequent headaches and the considerable burden of comorbidities associated with TTH, it is not surprising that about three quarters of people with chronic TTH report a reduction in their normal activities caused by their headaches at some time in the preceding 6 months.[15]

TTH is responsible for both presenteeism and absenteeism from work. A study from the USA indicated that TTH was responsible for 43% of estimated annual lost workdays because of headache and combined with other headaches excluding migraine, for approximately 64% of annual estimated reduced effectiveness workday equivalents.[23]

Around one in four people with TTH report major decreases in the ability to participate in social activities, family life and housework.[2]

Conclusions and implications for management of TTH

As with other chronic pain conditions, comorbidities are common in people with TTH. Although more severe and frequent headaches are associated with a higher frequency of depression, anxiety and sleep disorders, these conditions also contribute to worsening frequency and severity of pain, and progression of episodic headache to chronic TTH. Depression, anxiety, poor sleep, stress, medication overuse and poor self-efficacy for managing headaches have been identified as important prognostic factors for poor prognosis and unfavourable outcomes from preventative treatment

in chronic headache.[24] In long-term follow-up studies approximately 25% of patients who initially present with episodic TTH progressed to development of chronic TTH.[25]

Despite the high frequency of TTH and associated impairment, only approximately 20% of those with TTH consult their general practitioner.[26] The majority choose self-care and self-medication. It should be noted that medication used for TTH needs to be carefully considered. For example, although caffeine-containing combination analgesics may be effective for headache, they are also likely to exacerbate sleep problems and are more likely to induce MOH than simple analgesics, such as ibuprofen.[22]

Current guidelines recommend simple analgesics (e.g., paracetamol, nonsteroidal anti-inflammatory drugs [NSAIDs]) as first-line therapy.[4,27-29] Studies indicate that NSAIDs, such as ibuprofen, are more effective in relieving TTH than paracetamol.[26] In Cochrane analyses, the number needed to treat (NNT) for pain free at 2 hours with ibuprofen 400 mg is approximately one third fewer than that for paracetamol 1000 mg.[30,31]

In patients with chronic headache and comorbidities, pain management alone may not be sufficient in managing their problems. The headache is unlikely to resolve unless the comorbidities, including depression, anxiety and sleep, are also addressed. This requires patient education and careful communication to ensure that patients understand the multimodal management approach and expectations from treatment. In addition to the possible role of specific medications where they are indicated, an effective management strategy may require lifestyle change, sleep hygiene, and cognitive behavioural therapy and other psychological approaches to improve the emotional burden of headache and coping strategies. Patients should be encouraged to maintain a healthy diet, to participate in physical and social activities and to avoid extended periods away from work.[9,19]

As long as TTH is regarded as a trivial condition and comorbidities remain undiagnosed no progress will be made in managing this condition.

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