Causes and Treatment of Tension Headache: Review Article

Abstract:

Tension-type headache (TTH) is the most prevalent primary headache problem, affecting 46 percent to 78 percent of people at some point in their lives. However, the majority have episodic infrequent TTH (1 day per month or fewer) with no specific need for medical treatment. The diagnosis is made based on the patient's medical history and physical examination. The exact etiology of tension-type headache is unknown. The most likely cause of rare tension-type headaches is activation of hyperexcitable peripheral afferent neurons from head and neck muscles. Nondrug management is commonly utilized and should be considered for all patients with TTH. The scientific evidence for the efficacy of most treatment approaches, on the other hand, is limited. Pharmacological treatment depends on whether the headache is acute or chronic. In this review we will cover the disease epidemiology, etiology, diagnosis, and management.

The aim is to study the Causes and Treatment of Tension Headache
method a population-based study in Denmark, About 24% to 37% of the population experienced TTH several times a month, 10% had it weekly, and 2% to 3% of the population had chronic TTH,

In contrast to migraine, women are only slightly more affected than males (the female-to-male ratio of TTH is 5:4), and onset is delayed (25 to 30 years). Between the ages of 30 and 39,

Introduction :

Tension type headaches (TTH) are repeated headache episodes that can last anywhere from a few minutes to many weeks. The discomfort is usually pressing or tightening in nature, mild to moderate in severity, and bilateral in position, and it does not get worse with regular physical activity. [1] There is usually no nausea or vomiting, but photophobia or phonophobia may be present. Psychogenic headache, stress headache, psychomyogenic headache, muscular contraction headache, and other words were previously used to describe these migraines. However, in

UNDER PEER REVIEW

1988, the International Classification Headache Diagnosis I (ICHD I) used the term "tension type headache" (TTH), which was preserved by ICHD II in 2004. [6]

Tension-type headache is a neurological condition marked by a proclivity for mild to moderate headache bouts with few other symptoms. The diagnosis is made based on the patient's medical history and physical examination. Over the last few decades, much of the greatest quality evidence for the treatment of tension-type headache has been focused on migraine, and much of the finest evidence for the treatment of tension-type headache is decades old. Over the last two decades, little has changed in terms of treatment. Many patients cure acute attacks themselves and seek help when they become more frequent or persistent. The focus of this review is on how to identify and manage individuals who require medical guidance concerning acute attacks as well as preventive treatment to prevent further attacks. [7]

Tension-type headache (TTH) is the most prevalent primary headache problem, affecting 46 percent to 78 percent of people at some point in their lives. TTH is more disabling and results in more lost work days than migraine. TTH is assumed to have a complex etiology, incorporating both genetic and environmental components. TTH is divided into three subtypes: occasional episodic, frequent episodic, and chronic. Patients report their headache discomfort as pressing, dull, and as if it were a tight band around their head. For the treatment of episodic TTH, nonprescription analgesics are recommended. Patients with chronic TTH, highly frequent episodic TTH, who are at risk of medication overuse headache, and who are unable to take effective doses of first-line medications might consider prophylaxis. For prophylaxis, amitriptyline is suggested as a first-line medication. Electromyography biofeedback, cognitive behavioural therapy, exercise, massage, and trigger point injection are examples of physical and integrative therapies for TTH management. [8]

UNDER PEER REVIEW

Classification:

Tension type headaches are classified into two types by the International Headache Society (ICHD II), episodic (ETTH) and chronic (CTTH) first digit categorization. Infrequent and frequent episodic tension headaches have

been separated into two types (second digit classification). Except for frequency, all three types of tension headaches have comparable clinical symptoms. On clinical examination, doctors should search for pericranial soreness in patients with tension type headaches and divide them into two groups: those with pericranial tenderness and those without (third digit classification). [1]

Epidemiology:

The lifetime frequency of TTH was considerable (78 percent) in a population-based study in Denmark, however the majority had episodic infrequent TTH (1 day per month or fewer) with no specific need for medical treatment.[1] About 24% to 37% of the population experienced TTH several times a month, 10% had it weekly, and 2% to 3% of the population had chronic TTH, which lasted for the majority of their lives.[9] TTH (tension type headaches that appear out of nowhere) is difficult to quantify. However, in a Danish epidemiologic follow-up research, the annual incidence of TTH for frequent TTH (female-to-male 3:1) was 14.2 per 1000 person years, decreasing with age. Poor self-reported health, difficulty to relax after work, and sleeping only a few hours each night were all risk factors for TTH. [11].

In contrast to migraine, women are only slightly more affected than males (the female-to-male ratio of TTH is 5:4), and onset is delayed (25 to 30 years).[1] Between the ages of 30 and 39, the prevalence peaks and then gradually declines with age.[12] TTH-related absenteeism is significant, according to a few studies from Europe and the United States, and can be three times higher than migraine-related absenteeism. Non-migraine headaches (of which TTH is a major cause) have higher indirect expenses than migraine headaches. Patients with psychiatric co-morbidities have a higher level of impairment. [17].

Causes and Pathophysiology:

The exact etiology of tension-type headache is unknown. The most likely cause of rare tension-type headaches is activation of hyperexcitable peripheral afferent neurons from head and neck muscles. Tension-type

UNDER PEER REVIEW

headache is connected with and aggravated by muscle discomfort and psychological tension, but it is unclear what causes it. Some patients with tension-type headache have abnormalities in central pain processing as well as generalized increased pain sensitivity. Tension-type headache susceptibility is determined by hereditary factors. [7]

Stress can cause or worsen a headache by increasing muscle contraction, producing catecholamines and cortisol, causing peripheral sensitization, and/or changing central pain processing. Long-term corticosteroid release in people who are stressed can result in tissue damage, which can contribute to pain and heightened pain perception. Stress has been observed in TTH patients to cause higher pericranial muscle pain ratings than in controls. There is no evidence, however, that stress causes increased pericranial EMG activity, and its involvement in TTH pathogenesis is unknown. [18]

Vitamin deficiencies have been implicated as a factor in TTH in various correlational investigations. In Turkish children, a possible vitamin B-12 link was investigated. Nearly a fifth of the 75 children in the control group, aged 11 to 15, reported headaches and blood B-12 levels below 200 in this study. With a vitamin B-12 level of 160, some had what experts called severe B-12 deficiency. All 18 of these children no longer had headaches after taking vitamin supplements. Similarly, data shows that vitamin D insufficiency is linked to TTH. Researchers compared 100 patients with persistent TTH to 100 healthy controls in a randomized control experiment. Vitamin D deficiency was found in nearly 70% of patients with chronic TTH, compared to only a quarter of the control group. [19]

Genetic Factors: Two registry-based twin studies looked into the impact of genetic variables on TTH and discovered that heritability estimates varied depending on whether or not simultaneous migraine is present. In one study, the heritability of TTH was 19 percent in migraine sufferers, but it was 48 percent in male twins and 44 percent in female twins in migraine sufferers. In occasional ETTH and frequent ETTH, the difference in concordance rates between monozygotic twins and same-sex dizygotic twins was 5% and 10%, respectively. Although no direct comparison was made between the two circumstances, this finding could indicate that the genetic effects were more significant in frequent ETTH than in uncommon

UNDER PEER REVIEW

ETTH. Because of the small sample sizes in twin studies, heredity for CTTH could not be established, but a family aggregation study indicated a threefold greater risk of CTTH in first-degree relatives of CTTH patients. Because simultaneous migraine was not assessed, this study should be viewed with caution. [18]

Central factors: The conversion of ETTH to CTTH is still not fully understood. Sensitization of second-order neurons in the dorsal horn of the spinal cord or the spinal trigeminal nucleus, sensitization of supraspinal neurons, and decreased antinociceptive or modulating activity from supraspinal structures such as the thalamus, limbic system, motor cortex, and somatosensory cortex may all contribute to TTH chronification. [18]

Overall, pain perception studies show that patients with frequent ETTH or CTTH have hyperalgesia (heightened sensitivity to painful stimuli) and allodynia (pain evoked by typically non-painful stimuli). The generic and extensive character of pain hypersensitivity in these patients suggests that core pain processing areas have been sensitized. [18]

Presentation and diagnosis:

People who suffer from infrequent episodic tension-type headaches are less likely to seek medical help. The severity of the pain and the likelihood that the patient will seek therapy increases as the frequency of tension-type headaches rises; younger patients are also more likely to seek treatment. 10 Patients usually describe a mild to severe bilateral muscle stiffness or pressure that lasts hours to days and is unrelated to constitutional or neurological symptoms. Patients may explain and identify the pain's location (the "band around the head") at the same time. [7]

The best available assessment tool for TTH is a diagnostic headache diary, which can be used to help with diagnosis and clinical decision-making. Patients can keep headache diaries to record clinical headache characteristics (such as frequency and characteristics) as well as concomitant symptoms. When compared to clinical examination alone, headache diaries have a number of advantages, including better identification of ETTH from CTTH. When compared to data acquired from prospective diary entries, patients tend to over-report their headache

UNDER PEER REVIEW

frequency at an initial clinical evaluation. Furthermore, diagnostic headache diaries can assist in distinguishing CTTH from other headache diseases, such as migraine and drug overuse headache (MOH). [19]

It might be difficult to tell the difference between a tension headache and other types of headaches, such as migraine or headache disorders caused by neck difficulties. Both migraine and tension-type headaches have chronic versions, and when headaches grow more regular, the migraine's distinguishing features fade away and the severity decreases. Tension-type headaches can induce muscle pain in the neck, causing patients and physicians to believe that the headache is caused by a neck issue. Medication overuse headache can also manifest as a chronic daily or near-daily pattern of non-descript headaches. The amount, nature, length, and frequency of pharmaceutical use required to produce overuse headache is unknown and likely varies from person to person. Patients who take opioid or combination analgesics for 10 or more days per month, or simple analgesics for 15 or more days per month, should be considered for this diagnosis. [7]

Treatment Options:

Nonpharmacological management:

Nondrug management is commonly utilized and should be considered for all patients with TTH. The scientific evidence for the efficacy of most treatment approaches, on the other hand, is limited. The fact that the doctor is concerned about the problem could be therapeutic, especially if the patient is worried about a serious ailment, such as a brain tumor, and can be reassured by a thorough examination. Because avoiding trigger variables may have a long-term effect, a complete investigation of trigger factors should be conducted. Stress (mental or physical), irregular or inappropriate meals, high intake of coffee and other caffeine-containing drinks, dehydration, sleep disorders, too much or too little sleep, reduced or inappropriate physical activity, psychological problems, as well as variations during the female menstrual cycle and hormonal substitution are the most commonly reported triggers for TTH. The majority of triggers are self-reported, and none of them have been scientifically tested. [20]

UNDER PEER REVIEW

Relaxation exercises : Relaxation training is to assist the patient in recognizing and controlling tension that emerges during daily activities. During the training, the patient tenses and then relaxes certain muscle groups across the body in a sequential manner. Later phases include remembering relaxation, associating relaxation with a cue word, and sustaining relaxation in muscles that aren't being used right now. [20]

Biofeedback with EMG: EMG biofeedback is intended to assist the patient in recognizing and controlling muscular tension by providing continuous feedback on muscle activity. Typical sessions include an adaptation period, a baseline phase, a training phase with feedback, and a self-control phase in which the patient trains managing muscular tension without input. [20]

Cognitive-behavioral therapy (CBT): The goal of cognitive-behavioral therapy is to teach the patient how to recognize stressful thoughts and beliefs that cause headaches. Alternative adaptive coping self-instructions are considered if these notions are questioned. To evaluate the validity of a given belief, a range of activities can be employed, including adopting another person's perspective on a circumstance, actively inventing alternative possible perspectives on a situation, and devising a behavioral experiment to test the validity of a particular belief.

Physical therapy: The most common nonpharmacological treatment for TTH is physical therapy, which includes posture modification, relaxation, exercise regimens, hot and cold packs, ultrasound, and electrical stimulation. However, the majority of these modalities have not been thoroughly researched. The use of active treatment techniques is generally advised. A controlled study demonstrated a small benefit by combining diverse approaches such as massage, relaxation, and home-based workouts. It was recently shown that combining craniocervical training with traditional physiotherapy was more effective than just physiotherapy. According to a recent study, there are no significant long-term differences in efficacy between relaxation training, physical training, and acupuncture for the treatment of episodic TTH, and spinal manipulation has no effect. [20]

Pharmacological Treatment

UNDER PEER REVIEW

Episodic tension type headache: As previously stated, most patients with intermittent episodic tension type headaches do not seek medical attention and instead rely on over-the-counter medications. Simple analgesics and NSAIDS are the cornerstones of acute treatment for people with episodic tension type headache. Randomized trials have indicated that aspirin (500 mg and 1000 mg) and acetaminophen (1000 mg) are beneficial in the immediate treatment of TTH. Between aspirin and acetaminophen, there is no discernible difference in efficacy. Ibuprofen (200–400 mg), naproxen sodium (375–550 mg), ketoprofen (25–50 mg), and diclofenac potassium (50–100 mg) are all non-steroidal anti-inflammatory medications (NSAIDs) that have been shown to be more efficacious than placebo in acute TTH. Many studies have demonstrated that these NSAIDs are likely more effective than acetaminophen and aspirin, however the results are not always clear. Caffeine, codeine, sedatives, or tranquillizers have all been used to boost the efficiency of NSAIDs, but they should be avoided due to the danger of addiction, abuse, and headache chronification. It's important to prevent overusing them. Opiates should be avoided at all costs. Muscle relaxants have little evidence of efficacy, and there is a danger of habituation. As a result, these are not recommended. Triptans may help some ETTH patients who also have migraines. These patients, on the other hand, should be taught how to notice and distinguish between migraine and ETTH symptoms so that they can take the right medication for each attack. In the case of recurring ETTH, nonpharmacologic treatment in the form of relaxation training may be beneficial. [1]

Chronic TTH Treatment: The purpose of chronic TTH therapy is to employ preventive drugs to lessen the frequency of headaches. Amitriptyline (a tricyclic antidepressant [TCA]) is the most efficacious and well-studied pharmacologic medication in the treatment of chronic TTH. Amitriptyline should be begun at a low dose (10 to 25 mg daily) and gradually increased (10 to 25 mg weekly) until the desired therapeutic response is achieved or the undesirable effects manifest. In most cases, the therapeutic response takes 3 to 4 weeks. Amitriptyline is normally continued for at least six months in responding patients before discontinuation is attempted. Amitriptyline may be taken long-term if chronic TTH recurs after discontinuation. Dry mouth, sleepiness, urine retention, cardiac arrhythmias, and glaucoma are all typical side effects. [19]

UNDER PEER REVIEW

Conclusion:

Tension-type headache (TTH) is the most prevalent primary headache problem, affecting 46 percent to 78 percent of people at some point in their lives. TTH is more disabling and results in more lost work days than migraine. And yet over the last few decades, much of the greatest quality evidence for the treatment of tension-type headache has been focused on migraine, and much of the finest evidence for the treatment of tension-type headache is decades old. In this matter more better treatment protocols need to developed, right now the usage of non-pharmacological treatment is seen also as effective as using pharmacological ones, we hope in the future for the improvement of better treatment as well as more diagnostic measurements for the diseases as it's still relies on physical examination and clinical presentations.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

UNDER PEER REVIEW

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UNDER PEER REVIEW

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