

TENSION HEADACHE

Background

1. Differentiate between episodic and chronic
2. International Headaches Society's criteria for tension-type headache:¹
 - At least 10 previous headache episodes fulfilling criteria B through D
 - Headache lasting from 30 minutes to 7 days
 - At least two of the following pain characteristics:
 - Pressing or tightening (non-pulsating) quality
 - Mild to moderate intensity (non-prohibitive)
 - Bilateral location
 - No aggravation from routine physical activity such as walking or climbing stairs
 - Both of the following:
 - No nausea or vomiting (anorexia may occur)
 - No more than one episode of photophobia or phonophobia
 - Not attributable to another disorder
3. Infrequent episodic tension-type headache¹
 - Diagnosed if headaches meeting the above criteria occur <1 day a month (<12 days a year) on average
4. Frequent episodic tension-type headache¹
 - Diagnosed if headaches occur >1 and <15 days a month (>12 and <180 days a year)
5. Chronic tension-type headaches¹
 - Diagnosed if headaches occur \geq 15 days a month (180 or more days a year)

Pathophysiology

1. Underlying cause uncertain; possibly secondary to activation of hyperexcitable peripheral afferent neurons from head and neck muscles.²
2. Prevalence in adults has wide range, 12-78%.^{2,3}
 - Prevalence peaks at 40-49 years in both males and females²
3. Risk Factors
 - Higher education level
 - Anxiety
 - Depression
 - Stress
4. Morbidity / Mortality
 - Very few with headaches result in lost work or decreased productivity

Diagnostics

1. History
 - Mild to moderate muscle tension, pressure, dull ache
 - Pain described as band extending bilaterally back from forehead across sides of head extending to the occiput
 - Radiation to cervical area
 - Cape-like distribution: radiating along medial and lateral trapezius muscles covering shoulders, scapular and intrascapular areas
 - No neurologic signs
2. Physical Examination

- Vitals
 - Ophthalmologic - no papilledema or visual field defects
 - Neurologic - normal cranial nerve, motor, sensory and cerebellar function
 - Neck - no meningeal signs
 - Extracranial structures – Normal carotid arteries, sinuses, scalp arteries, and temporomandibular joint
3. Diagnostic Testing or Laboratory evaluation
 - Further workup only if signs suggestive of secondary headache
 4. Diagnostic imaging
 - Indications for Neuroimaging
 - Focal neurological findings on exam (SOR:B)⁴
 - Decreased level of consciousness (SOR:B)⁴
 - Occipitouchal location (SOR:B)⁴
 - Multiple associated symptoms (SOR:B)⁴
 - Age older than 55 years (SOR:B)⁴
 - Headache initiated after exertion or Valsalva's maneuver³
 - Acute onset of severe headache³
 - Headache that awakens patient at night³
 - Change in well established headache pattern³
 - New onset headache in patient >35 years of age³
 - New onset headache in patient with previously diagnosed cancer³
 - New onset headache in patient with HIV infection (SOR:C)⁴

Differential Diagnosis

1. Key Differential Diagnoses
 - Intracranial mass or pathology
 - Migraine
 - Meningitis
 - Cluster headache
2. Extensive Differential Diagnoses
 - Subdural hematoma
 - Epidural hematoma
 - Metabolic disorders
 - Craniocervical arterial dissection
 - Giant cell arteritis
 - Acute or obstructive hydrocephalus
 - Cerebral spinal fluid leak
 - Cerebral venous sinus thrombosis
 - Cervical spine disease
 - Cervical strain
 - Sinusitis
 - Transient ischemic attack
 - Optic neuritis
 - Glaucoma
 - Carotid artery dissection
 - Temporomandibular joint syndrome

Therapeutics

1. Infrequent headache, adequate response with over the counter analgesia medication
 - No further medical treatment indicated
 - May need to reassure
2. Acute Treatment
 - Aspirin, 500-1,000 mg
 - Nonsteroidal anti-inflammatories (NSAIDs) better than acetaminophen²
 - Limit to twice weekly dosing; use should not exceed nine days per month⁵
 - To avoid development of chronic headache
 - To avoid development of rebound headache
 - Acetaminophen is a commonly used over-the-counter medication
 - Similar risk to NSAIDs apply to acetaminophen for development of chronic or rebound headache
 - NSAIDs or acetaminophen plus caffeine more effective than single therapy²
 - Butalbital or combination therapy containing butalbital not recommended²
 - Associated with decreased alertness, overuse and dependency is commonly seen
 - Combination therapies typically have acetaminophen or NSAIDs
 - Risk of chronic and rebound headache also apply
 - Opiates are typically not recommended^{2,3}
 - Concern for development of dependence
 - Increase risk of developing chronic headache
 - May have some benefit in carefully selected patients (SOR:C)⁶
 - Spinal manipulation therapy reduces pain and frequency of tension-type headaches (SOR:B)⁷
 - Toggle recoil technique
 - Low velocity cervical joint mobilization technique
 - High velocity manipulation technique
 - Cervical soft tissue massage
 - Occipital decompression
 - Myofascial unwinding
 - Biofeedback (SOR:A)⁸
 - Discovering and ameliorating circumstances triggering headaches
 - Stress
 - Environment
 - Augment above analgesics with sedating antihistamines³
 - Promethazine
 - Diphenhydramine
 - Augment above analgesics with antiemetics³
 - Metoclopramide
 - Prochlorperazine
 - Education and lifestyle changes
 - Limited evidence for effectiveness²
 - Botulinum injections no better than placebo⁹
 - Limited evidence
3. Chronic tension-type headaches
 - Limit use of analgesics to two times weekly to prevent development of chronic daily headaches

- Evidence for prophylactic drugs not clearly better than placebo (SOR:A)¹⁰
 - Antidepressants including TCA and SSRI
 - Muscle relaxants
 - Benzodiazepines
 - Vasodilatory agents
 - 5-HT receptor agonists (Triptans)
- 4. Further Management (24 hrs)
 - Red flag signs to seek immediate care³
 - Visual disturbances or other focal neurological sign
 - Constant generalized pain
 - Fever
 - Stiff neck
 - Recent trauma
- 5. Long-Term Care
 - Watch for rebound headache
 - Treatment includes (none of the following affect frequency or severity of headache)
 - Discontinuation of offending agent and treating headache with dihydroergotamine as needed (SOR:C)¹¹
 - Amitriptyline may improve quality of life, but does have significant anticholinergic side effects (SOR:B)¹¹
 - Other TCA's have not been studied; class effect possible but unproven
 - Prednisone or naratriptan to lessen acute withdrawal symptoms and reduce need for rescue medications during first 6 days of treatment (SOR:B)¹¹

Follow-Up

1. Return to Office
 - Time frame for return to office depends on severity and response to acute management
 - Recommendations for earlier follow-up include development of red flag symptoms noted above
2. Refer to Specialist (headache specialist or neurologist)
 - Diagnosis cannot be confirmed
 - Etiology cannot be determined
 - Warning signs present
3. Admit to Hospital
 - Tension headache does not require hospitalization

Prognosis

1. Favorable: 45% of adults with frequent or chronic tension-type headache at baseline in remission when examined three years later.
 - 39% still had frequent headaches, and
 - 16% had chronic tension-type headache.¹²
2. Poor outcomes associated with¹²
 - Presence of chronic tension-type headache at baseline
 - Coexisting migraine
 - Not being married

- Sleep pathology
- 3. Predictive factors for remission¹²
 - Older age
 - Absence of chronic tension-type headache at baseline.

Prevention

1. Efficacy or effectiveness of prophylactic drugs for tension-type headache not shown to be clearly better than placebo¹⁰
2. Smoking cessation
3. Acupuncture¹³ (SOR:A)¹⁴
4. Amitriptyline 10-100 mg has been used in the past for chronic tension-type headaches^{2,3}
 - Presumed other tricyclic antidepressants are equally effective based on class effect
 - Nortriptyline often used based on better side effect profile (especially in the elderly due to its low anticholinergic effects)
5. Chinese herbal therapies (SOR:C)¹⁴

Patient Education

1. American Headache Society (www.americanheadachesociety.org)
2. AAFP Patient Handout (<http://www.aafp.org/afp/2005/1101/p1815.html>)

References

1. Headache Classification Subcommittee of the International Headache Society. The international classification of headache disorders: 2nd Edition. Cephalalgia 2004;24(suppl1):9-160
2. Loder E, Rizzoli P. Tension-type Headache. BMJ Clinical Review, BMJ. 2008; 336:88-92
3. Millea PJ, Brode JJ. Tension-type Headache. Am Fam Physician. 2002 Sept 1;66(5):797-804 <http://www.aafp.org/afp/2002/0901/p797.html>
4. Grayson S, Neher JO, Howard E. When is neuroimaging warranted for headaches? The Journal of Family Practice. 2005 Nov;54(11):988-9 <https://mospace.umsystem.edu/xmlui/handle/10355/3386>
5. Institute for Clinical Systems Improvement (ICSI). Diagnosis and treatment of headache. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2011 Jan. 84 p. [147 references] http://www.icsi.org/headache/headache_diagnosis_and_treatment_of_2609.html
6. Combs C, Loper J, Ramakrishnan K. Are narcotics effective for treatment of patients with chronic daily headaches? Evidence-Based Practice. 2008 May;4. <https://mospace.umsystem.edu/xmlui/handle/10355/7314>
7. Keays AC, Neher JO, Safranek S. Is osteopathic manipulation effective for headaches? The Journal of Family Practice. 2008 March;57(3):190-1. <https://mospace.umsystem.edu/xmlui/handle/10355/3793>
8. Hekmatpour E, Rollins V. Is biofeedback an effective treatment for tension headache? Evidence-Based Practice. 2009 Apr;4. <https://mospace.umsystem.edu/xmlui/handle/10355/7446>
9. Rollnik JD, Tanneberger O, Schubert M, Schneider U, Dengler R. Treatment of Tension-type Headache With Botulinum Toxin Type A: A Double-Blind, Placebo-Controlled Study. Headache. 2000 Apr;40(4):300-5

10. Verhagen AP, Damen L, Berger MY, Passchier J, KOes BW. Lack of Benefit for Prophylactic Drugs of Tension-type Headache in Adults: a Systemic Review. *Fam Pract.* 2010 Apr;27(2):151-65.
<http://fampra.oxfordjournals.org/content/27/2/151.full.pdf+html>
11. McPherson V, Leach L. What is the best treatment for analgesic rebound headaches? *The Journal of Family Practice.* 2005 March;54(3):277-8.
<https://mospace.umsystem.edu/xmlui/handle/10355/3335>
12. Lynberg AC, Rasmussen BK, Jorgensen T, Jensen R. Prognosis of migraine and tension-type headache: a population-based follow-up study. *Neurology.* 2005;65:580-5.
13. Linde K, Allais G, Brinkhaus B, Manheimer E, Vickers A, White AR. Acupuncture for tension-type headache. *Cochrane Database of Systemic Reviews* 2009, Issue 1. Art. No.: CD007587. DOI: 10.1002/14651858.CD007587.
14. Reitzenstein J, Bailey J. What complementary and alternative therapies are safe and effective for tension headache? *Evidence-Based Practice.* June 2011;14(6):8-9.
<https://mospace.umsystem.edu/xmlui/handle/10355/11030>

Authors: Sean Robinson, MD, & Melissa Novak, DO, *Oregon Health & Sciences University*

Editor: Robert Marshall, MD, MPH, MISM, CMIO, *Madigan Army Medical Center, Tacoma, WA*