

A Military Clinician's Approach to Post-Traumatic Headache

Jason N. Harris, MD
LTC, MC, USA
Chief of Neuro-Ophthalmology
Brooke Army Medical Center

Primary Care Management of Headaches After mTBI in the Active-Duty Military Population

Chronic post-traumatic headaches (PTH) are one of the primary patient complaints following head injury. PTH is defined as a headache emerging within seven days of injury or immediately after regaining consciousness. Despite the high prevalence of these headaches the exact mechanism is unclear. Post-concussive headaches usually resemble migraine, tension or "cervicogenic" headaches. The following recommendations are for these types of headaches.

Management: Acute Period (first three weeks):

- Use the history, exam and imaging, as needed, to rule out life threatening processes.
- Ensure that the patient receives cognitive and physical rest. Gradually resume activities as tolerated over days to weeks from injury. Inadequate rest frequently leads to long-term complications.
- Impart a positive expectation of recovery. Almost all concussions heal fully when there is adequate rest and the positive expectation for a full recovery.
- Enlist the help of Behavioral Health for acute stress reactions and/or PTSD, as warranted.
- Use acetaminophen and/or NSAIDs for headaches. If no bleeding issues, NSAIDs are preferable.
- If the individual requires analgesics more than twice a day for more than three days, start a headache prophylactic to help avoid developing analgesic overuse headaches.
- For headache prophylaxis, low-dose amitriptyline (10mg PO QHS titrating slowly up to 30mg PO QHS) is often ideal. It is usually safe with other psychiatric meds at this dosing, can facilitate rest and does not typically cause cognitive slowing (as does topiramate). This can be weaned off several weeks after the patient has become asymptomatic.
- A 2-3 week course of valproic acid 250mg PO bid can also be helpful as it acts as both a headache prophylactic AND an abortive therapy, although onset not as fast as NSAIDs, and does not cause rebound headaches. At this dose, drug levels don't need to be monitored if hepatic function is normal. Use caution as it is teratogenic and has drug-drug interactions.
- Triptans should generally be avoided in the acute period after a concussion given the theoretical concerns of vasoconstriction impairing brain healing.
- Avoid opioids. They greatly increase the risk of chronic post-concussive headache disorders.
- Muscle relaxants may help cervicogenic headaches but rule out serious neck injury first.
- Occipital neuralgia or other types of "neuropathic" headaches can respond well to nerve blocks and/or other types of treatment. Enlist the help of a specialist.

Management: Chronic Period (beyond three weeks from injury):

- If the individual isn't getting at least 7-9 hours nightly of restorative sleep, investigate and treat the cause(s). The headaches are NOT going to go away if the patient is getting poor sleep.
- If the patient is using analgesics for any reason more than two days a week or using caffeine daily, then medication overuse may be at play. Stop the offending agent(s) and start a headache

prophylactic. Headaches may worsen before they improve. A short course of valproic acid can help function as a “bridge” while waiting for other prophylactics to become effective.

- Amitriptyline, topiramate, propranolol, venlafaxine and valproic acid all have excellent data for headache prophylaxis. Propranolol often causes side effects when dosed high enough to be an effective headache prophylactic and may not be ideal for many of the active-duty population.
- NSAIDs and Triptans are ideal headache abortants. Any combination of these should not be used more than two days a week to avoid medication overuse headaches.
- If mental health concerns are at play, enlist behavioral health team members.
- If the above measures fail or if the headaches have characteristics that are not migrainous, tension or uncomplicated “cervicogenic” in nature, seek additional help from specialists.

Resources:

Cooper DB, Bunner AE, Kennedy JE, Balldin V, Tate DF, Eapen BC, Jaramillo CA. Treatment of persistent post-concussive symptoms after mild traumatic brain injury: a systematic review of cognitive rehabilitation and behavioral health interventions in military service members and veterans. *Brain Imaging Behav.* 2015 Sep;9(3):403-20.

Gooriah R, Nimeri R, Ahmed F. Evidence-Based Treatments for Adults with Migraine. *Pain Res Treat.* 2015;2015:629382.

Lucas S, Hoffman JM, Bell KR, Dikmen S. A prospective study of prevalence and characterization of headache following mild traumatic brain injury. *Cephalalgia.* 2014 Feb;34(2):93-102.

Ozyalcin SN, Talu GK, Kiziltan E, Yucel B, Ertas M, Disci R. The efficacy and safety of venlafaxine in the prophylaxis of migraine. *Headache.* 2005 Feb;45(2):144-52

Tepper SJ. Medication-overuse headache. *Continuum (Minneap Minn).* 2012 Aug;18(4):807-22.

Theeler BJ, Flynn FG, Erickson JC. Headaches after concussion in US soldiers returning from Iraq or Afghanistan. *Headache.* 2010 Sep;50(8):1262-72

file:///C:/Users/JASO~1.HAR/AppData/Local/Temp/MicrosoftEdgeDownloads/57550898-74b1-454e-b766-dd977d2b4d58/4309132HeadachesFollowingmTBIClinicalRecommendation20210806508_20211123.pdf (Management of Headache Following Concussion/

Mild Traumatic Brain Injury: Guidance for Primary Care

Management in Deployed and Non-Deployed Settings) (health.mil website)

Management of Headache Following Concussion/Mild Traumatic Brain Injury: Guidance for Primary Care, Management in Deployed and Non-Deployed Settings (accessed June 30, 2023) -

<https://www.health.mil/Reference-Center/Publications/2020/07/31/Management-of-Headache-Following-ConcussionmTBI-Clinical-Recommendation>

Progressive Return to Activity: Primary Care for Acute Concussion Management (accessed June 30, 2023) - <https://www.health.mil/Reference-Center/Publications/2023/01/23/Progressive-Return-to-Activity-Primary-Care-for-Acute-Concussion-Management>

