North Carolina Department Of Correction
Division Of Prisons

SECTION: Clinical Practice Guidelines

POLICY # CP-15
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SUBJECT: Headaches

EFFECTIVE DATE: August 2010
SUPERCEDES DATE: None

PURPOSE

To assure that DOP inmates with Headaches are receiving high quality Primary Care for their condition.

POLICY

All DOP Primary Care Providers are to follow these guidelines when treating inmates with this chronic disease. Deviations from these guidelines are permissible only on a case by case basis. When deviations are made they must be clearly documented in the medical record along with a clear explanation of the rationale for the deviation.

PROCEDURE

I. Diagnosis
- A. Effective management of headaches requires an accurate diagnosis. For the majority of chronic headaches this can be accomplished through a thorough history and physical evaluation.
- B. **Detailed History - the following should be obtained on all new headache patients:**
  1. Descriptive characteristics: pulsatile, throbbing, pressure, sharp, etc.
  2. Location: unilateral, bilateral, changing sides
  3. Severity
  4. Associated level of disability resulting from headache: lost time from work or school, etc.
  5. Temporal profile
     a) Time from onset to peak level of pain
     b) Usual time of onset (season, natural cycle, day of the week, hour of the day, etc.)
     c) Frequency and duration
     d) Stable or changing pattern
  6. Autonomic features
     a) Nasal stuffiness
     b) Rhinorrhea
     c) Tearing
     d) Eyelid ptosis or edema
  7. Triggers or precipitating events
  8. Aggravating/alleviating factors
  9. Previous pharmacologic and nonpharmacologic treatments and their effectiveness
  10. Aura
- C. **Focused Physical Exam**
  1. Vital signs (blood pressure, pulse, respirations and temperature)
  2. Extracranial structure evaluation such as carotid arteries, sinuses, scalp arteries, cervical paraspinal muscles
  3. Examination of the neck in flexion versus lateral rotation for meningeal irritation.
  4. Minimal general physical examination is performed at the first consultation of patient presenting with a headache.
- D. **Focused Neurological Examination**
  1. Assessment of patient's awareness and consciousness, presence of confusion, and memory impairment.
  2. Ophthalmological exam to include pupillary symmetry and reactivity, optic fundi, visual fields, and ocular motility.
  3. Cranial nerve examination to include corneal reflexes, facial sensation and facial symmetry.
  4. Symmetric muscle tone, strength (may be as subtle as arm or leg drift), or deep tendon reflexes.
  5. Sensation.
  6. Plantar response(s).
  7. Gait, arm and leg coordination.
- E. **Warning signs of possible disorder** other than primary headache
  1. Headaches that significantly worsen over time (months).

2. A new or different headache or a statement by a headache patient that "this is the worst headache ever."
3. Any headache of maximum severity at onset.
4. Headaches of new onset after the age of 50 years old.
5. Persistent headache precipitated by a Valsalva maneuver such as cough, sneeze, bending or with exertion (physical or sexual).
6. Evidence such as fever, hypertension, myalgias, weight loss or scalp tenderness suggesting a systemic disorder.
7. Neurological signs that may suggest a secondary cause. For example: meningismus, confusion, altered levels of consciousness, changes or impairment of memory, papilledema, visual field defect, cranial nerve asymmetry, extremity drifts or weaknesses, clear sensory deficits, reflex asymmetry, extensor plantar response, or gait disturbances.
8. Seizures.
9. New or changing headache in a high-risk population, i.e. HIV, cancer patients, etc.
10. Temporal headaches in an elderly patient
11. New headache accompanied with a severe stiff neck

F. Establish diagnosis
   1. **Primary Headache Disorder:** ***see Appendix 1***
   2. **Chronic Daily Headache:** Chronic daily headache refers to the presence of a headache more than 15 days per month for greater than three months. Chronic daily headache has been estimated to occur in 2.5%-4.0% of the general population with surveys showing that chronic tension-type headache is a bit more common than chronic migraine (transformed migraine): ***See Appendix 2***
   3. Migraine headaches are often mistakenly diagnosed by patients and physicians as tension or sinus headaches. Screening questions for migraine: 2 of 3 = 93% positive predictive value, 3 of 3 = 98% PPV
      a) Are you nauseated or sick to your stomach with your headaches?
      b) Has a headache limited your activities for a day or more in the last 3 months?
      c) Does light bother you when you have a headache?

G. Investigations: **rarely needed in the evaluation of primary headache disorders.** Most studies of imaging in headaches have shown far *less than 1%* yield of potentially treatable lesions *(The American College of Radiology Appropriateness Criteria for Headache [Reference Number 2 below] reviewed over a dozen studies that showed < 1% yield of treatable lesions from imaging done for headaches).* Other studies have shown that there is a significant risk to the patient from **false positive** findings on advanced imaging which can lead to further unnecessary interventions.
   1. CT or MRI are only warranted:
      a) In cases that fit the above syndromes where there are:
         (1) Focal neurologic signs
         (2) New seizure disorder
         (3) Substantial change in headache pattern
      b) If one of the above warning signs are present
   2. EEG are indicated only if seizures are present
   3. Lumbar Puncture is indicated only if acute infection or bleeding is suspected

II. Treatment

A. General guidelines
   1. **Acute treatment, including both abortive and rescue medications, should never be prescribed more than twice weekly or six to eight times per month.**
      a) This specifically includes all triptans, non-opioid and opioid analgesics, and ergotamine compounds
   2. More frequent acute treatment has a very high risk of converting a Primary Headache Disorder to a Chronic Headache Disorder which are much more difficult treat
   3. The primary goal of treatment is to restore or maintain **function** (i.e. the ability to perform essential ADLs and official duties)**.** Treatments that do not improve function should be discontinued.

4. Use a headache diary to identify triggers then avoid or eliminate the triggers.

B. Non pharmacologic therapy
   1. Often very effective alone and can complement pharmacologic therapies
   2. Relaxation techniques
   3. Proper sleep and diet habits, i.e. keeping regular and consistent schedule for eating and sleeping
   4. Regular exercise
   5. Avoidance of behaviors or situations that trigger headaches
   6. Heat or cold applications
   7. Mental health consultation particularly if signs of anxiety or depression exist

C. Migraine therapy
   1. Abortive (therapy started early in the course of a headache which stops the headache)
      a) Needs to be used early in the onset of the headache to be most effective
      b) Non pharmacologic therapy is often helpful and can augment medications
      c) Mild to moderate headaches
         (1) Aspirin 250 mg/acetaminophen 250 mg/caffeine 65 mg
         (2) Isometheptene mucate 65 mg/dichloralphenazone 100 mg/APAP 325 mg
         (3) NSAIDs: low to moderate doses
         (4) Ergotamine preparations
         (5) Metoclopramide: given in combination with one of the above when nausea is a major component
      d) Moderate to severe headaches
         (1) Aspirin or NASID/ergotamine/metoclopramide combination therapy
         (2) Prochlorperazine PR with/without NSAID and/or ergotamine
         (3) Corticosteroids
         (4) Oral Triptans*
         (5) Nasal or injectable Triptans* (will only be considered if Oral Triptans ineffective or contraindicated)
         (6) DHE nasal spray* (will only be considered if Triptans ineffective or contraindicated)
   2. Rescue therapy (therapy given after a headache is well established to relieve the symptoms of the headache)
      a) Use when abortive therapy fails to return patient to a ***functional state***.
      b) Use should be very limited, generally ***no more then 1 or 2 times per month***
      c) Use will usually preclude return to routine activities for 6 to 8 hours
      d) Agents
         (1) Parenteral metoclopramide, chlorpromazine, or prochlorperazine
         (2) Ketorolac IM
         (3) Narcotics PO/IM (***use should be limited to failure of (1) & (2) above***)
         (4) Combinations of the above
         (5) DHE * (see appendix 3)
   3. Prophylactic therapy (therapy given on a regular basis to prevent headaches from occurring and/or less than the severity of headaches that do occur)
      a) When to use
         (1) Should be started if the patient is having headaches that require treatment more then 1 – 2/week or 4 – 6/ month
         (2) Acute medications and effective, contraindicated, overuse, or not tolerated
         (3) Headaches significantly interferes with patients daily routine despite acute treatment
         (4) 25% of migraineurs meet criteria for prevention, but only 5% generally use this therapy
      b) Consider having patient do a headache diary to identify avoidable triggers
      c) Agents
         (1) Beta-blockers: propranolol, atenolol, and metoprolol
            (a) Proven efficacious

(b) One beta-blocker may work, when another has not. Usually should try at least two different beta-blockers before moving to another class of drugs
(c) Atenolol and metoprolol may have less side effects then propranolol

(2) Valproic Acid
(a) Proven efficacious, some authorities feel it should be the first agent used, it is also effective for tension headaches
(b) Routine drug levels are not indicated, though an annual hepatic panel would be wise
(c) Usual dose for migraines is 250 – 500 bid

(3) Tricyclic antidepressants
(a) Amitriptyline is proven efficacious, but others may also be effective and have less side effects
(b) Effective in both depressed and non-depressed patients
(c) Usually require lower doses then used in depression, usual starting dose is 10 – 25 mg qhs
(d) Also effective in tension headaches

(4) Calcium channel blockers
(a) Not as effective and have a long latency-to-action
(b) Verapamil has the most proof of effectiveness
(c) General should only be considered if the above are ineffective or intolerable

(5) Alternatives with some data
(a) Magnesium salts: 400 to 600 mg daily
(b) Riboflavin: 400 mg daily

(6) Antiepileptics (generally will only be approved if above ineffective or contraindicated)
(a) Gabapentin*
(b) Topamax*

D. Tension

1. General Principles
a) Acute treatment should not be used on average more then 2 days/week, 8 days/month and/or 10 to 15 doses per month. **More frequent then this may cause rebound headaches**.
b) If acute treatment is required more often then above, then prophylactic therapy should be started
c) Narcotics are almost never appropriate in the management of non-migrainous tension headaches.
d) Use nonpharmacologic measures first and/or in addition to pharmacologic therapy

2. Acute pharmacologic therapy
a) Should always be limited to no more than 10 to 15 doses per month, one to two days per week and/or six to eight days per month
b) Step one: Simple OTC analgesics should be tried first
(1) Acetaminophen
(2) Aspirin
(3) OTC doses of ibuprofen or naproxen sodium
c) Step two: combination OTC analgesics
(1) Aspirin/acetaminophen/caffeine (Excedrin)
(2) Acetaminophen/Phenyltoloxamine (Percogesic)
d) Step three:
(1) Prescription doses of NSAIDs though maximum doses are rarely indicated
(2) Isometheptene/Dichloralphenazone/APAP (Midrin)

3. Prophylactic therapy
a) Should be considered any time when acute therapy is inadequately controlling the patient's symptoms.

b) Tricyclic antidepressants are generally the most effective agents and in most patients unless there are contraindications should be tried first.

c) If triyclics are ineffective, contraindicated, or not tolerated any of the agents listed above for migraines can be tried.

E. Chronic daily headaches
   1. If due to rebound which is likely if the patient is taking acute medication more than 10 to 15 times a month, abruptly stop acute medication for up to two months. The patient may experience severe headaches during this time but not stopping all acute medications will likely lead to failure.
   2. Start appropriate prophylactic medication based on recommendations above.
   3. Stress nonpharmacologic measures
   4. Mental health consultation if there are signs of significant anxiety or depression
   5. In severe cases consider admit to an infirmary (see Appendix 3)
   6. Once recovered may restart acute medication but must be carefully monitored and limited to the above guidelines

F. Cluster Headaches
   1. Acute therapy
      a) Oxygen inhalation is highly effective, seven to 15 L per minute by non-rebreathing mask
      b) Subcutaneous sumatriptan may also be effective
      c) DHE provide prompt and effective relief in 15 minutes but due to the rapid peak intensity and short duration of cluster headaches it may not be as useful as sumatriptan.
   2. Bridging therapy
      a) This treatment is initiated simultaneously with maintenance therapy after acute treatment has suppressed the initial attack. Bridging treatment allows for the rapid suppression of cluster attacks in the interim until the maintenance treatment reaches therapeutic levels.
      b) Agents
         (1) Corticosteroids
         (2) Ergotamines
         (3) Occipital nerve block
   3. Maintenance therapy
      a) Start as soon as acute therapy is successful
      b) Continue until cluster cycle is likely over then taper
      c) Agents
         (1) Verapamil-high dose
         (2) Valproic Acid
         (3) Lithium
         (4) Topiramate

* Require UR approval, to gain approval must have failed or have contraindication to formulary agents

8/10/10

Paula Y. Smith, MD, Director of Health Services Date

SOR: Deputy Medical Director

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Appendix 1: Primary Headache Syndrome Criteria

Migraine: with and without Aura Episodic A. At least two of 1-4, plus one of 5 or 6: 1. Unilateral location 2. Pulsating/throbbing quality 3. Moderate or severe intensity (inhibits or prohibits daily activities) 4. Aggravation by routine activity 5. Nausea and/or vomiting 6. Photophobia and phonophobia B. Aura criteria 1. One or more fully reversible aura symptoms 2. At least one aura symptom develops over more than 4 minutes or two or more symptoms occur in succession 3. Symptoms do not last more than 60 minutes 4. Attack follows within 60 minutes C. Previous similar attacks D. Organic disorder is ruled out by the initial evaluation or by diagnostic studies. If another disorder is present, the headaches should not have started in close temporal relationship to the disorder.	**Tension-Type Headache** A. Headache less than 15 days per month. B. Lasts 30 minutes to 7 days C. At least two of the following characteristics: 1. Pressing/tightening (non-pulsating) quality 2. Mild to moderate intensity (may inhibit, but does not prohibit activities) 3. Bilateral location 4. Not aggravated by routine physical activity D. Both of the following: 1. No nausea or vomiting (anorexia may occur) 2. Photophobia and phonophobia are absent, or only one of the two is present E. Organic disorder is ruled out by the initial evaluation or by diagnostic studies. If another disorder is present, the headaches should not have started in close temporal relationship to the disorder.
Chronic Tension-Type Headache A. Average frequency of greater than 15 attacks per month B. At least two of the following pain characteristics: 1. Pressing/tightening quality 2. Mild to moderate intensity (may inhibit, but does not prohibit activities) 3. Bilateral location 4. Not aggravated by routine physical activity C. Both of the following: 1. No vomiting 2. No more than one of the following: Nausea, photophobia or phonophobia D. Organic disorder is ruled out by the initial evaluation or by diagnostic studies. If another disorder is present, the headaches should not have started in close temporal relationship to the disorder.	**Cluster Headache** A. Severe unilateral orbital, supraorbital and/or temporal pain lasting 15 to 180 minutes untreated B. Attack is associated with at least one of the following signs on the side of the pain: 1. Conjunctival injection 2. Lacrimation 3. Nasal congestion 4. Rhinorrhea 5. Forehead and facial swelling 6. Miosis 7. Ptosis 8. Eyelid edema 9. Agitation, unable to lie down C. Frequency from one every other day to eight per day D. Organic disorder is ruled out by the initial evaluation or by diagnostic studies. If another disorder is present, the headaches should not have started in close temporal relationship to the disorder.

Appendix 2: Chronic Daily Headache Criteria

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Transformed migraine

1) Daily or almost daily (more than 15 days per month) head pain for more than one month
2) Average headache lasting more than four hours per day (if untreated)
3) Meets at least one of the following criteria:
   a) History of any form of episodic migraine meeting International Headache Society criteria
   b) History of increasing headache frequency with decreasing severity of migrainous features over a period of at least three months
   c) During the headaches, at least one of the following must be present: nausea, vomiting or both; photophobia and phonophobia; and no attribution to another disorder
   d) Headache at some time meets IHS criteria for migraine other than duration
      i) Migraine without aura includes at least five attacks that last 4 to 72 hours (untreated or unsuccessfully treated).
      ii) The headaches must have at least two of the following characteristics: Unilateral location, pulsating quality, moderate or severe pain intensity, and reason for avoidance of routine physical activity (e.g., walking or climbing stairs)
   e) Does not meet criteria for new daily persistent headache or hemicrania continua

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Hemicrania continua

A less common but not rare (and under recognized) cause for chronic daily headache is hemicrania continua. Hemicrania continua description is a persistent strictly unilateral headache responsive to indomethacin.
Criteria:

1) Headache for more than three months fulfilling criteria B-D
2) All of the following characteristics:
   a) unilateral pain without side-shift
   b) daily and continuous, without pain-free periods
   c) moderate intensity, but with exacerbations of severe pain
3) At least one of the following autonomic features occurs during exacerbations and ipsilateral to the
4) side of pain:
   a) conjunctival injection and/or lacrimation
   b) nasal congestion and/or rhinorrhoea
   c) ptosis and/or miosis
5) Complete response to therapeutic doses of indomethacin
6) Not attributed to another disorder

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Tension-type headache

1) Headache occurring on 15 days or more per month on average for more than three months (180 days or more per year) and fulfilling criteria B-D
2) Headache lasts hours or may be continuous
3) Headache has at least two of the following characteristics:
   a) bilateral location
   b) pressing/tightening (non-pulsating) quality
   c) mild or moderate intensity
   d) not aggravated by routine physical activity such as walking or climbing stairs
4) Both of the following:
   a) no more than one of photophobia,

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Medication-overuse headache

1) Definition of overuse of medication
2) Headache present at least 15 days per month characterized by the development or marked worsening of pain during medication overuse and resolution of pain and reversion to previous episodic pattern (less than 15 days per month) within two months after discontinuation of medication
3) Regular overuse of a headache medication for more than three months
4) Use of **ergotamine, triptans, opioids and combination analgesics** more than **10 days** per month
5) Use of simple analgesics 15 days or more per month

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phonophobia or mild nausea b) neither moderate or severe nausea nor vomiting 5) Not attributed to another disorder	6) Total use of all headache medications 15 or more days per month

Appendix 3: DHE therapy

I. Contraindications
- A. Pregnancy
- B. History of ischemic heart disease
- C. History of Prinzmetal's angina
- D. Severe peripheral vascular disease
- E. Onset of chest pain following administration of test dose
- F. Within 24 hours of receiving any triptan or ergot derivative
- G. Elevated blood pressure
- H. Patients with hemiplegic or basilar-type migraines*

II. **Continuous infusion** option
- A. Give 10 mg of metoclopramide IV then q8h PRN
- B. Begin DHE 3 mg/1000cc IV at 42 ml/hr (0.125 mg/hr) for up to 7 days
- C. Side effects management
  1. If significant nausea occurs at any time, reduce the rate of DHE to 21 to 30 mL/hr.
  2. If diarrhea occurs, give diphenoxylate with atropine (Lomotil®), one or two tablets, three times daily as needed.
  3. If excessive anxiety, jitteriness (akathisia), or dystonic reaction occurs, give IV benztropine (Cogentin®)1 mg.

III. **Intermittent dosing** option
- A. Give 10 mg of metoclopramide IV then repeat 15 minutes before each dose of DHE if having nausea
- B. DHE 0.5 mg IV over 2-3 minutes as test dose
- C. If Blood Pressure Stable and No Chest Pain then
- D. DHE 0.5 mg IV q 8 hours for 2-5 days
  1. May give the second dose of 0.5 mg in one hour after the test dose if headache persists and not having significant side effects
- E. Manage side effects as noted above or by reducing the dose to 0.3-0.4 mg

IV. Resume migraine or tension headache prophylaxis