Update

Getting Ahead of Headaches

Khurshid A. Khan, MD, FRCPC; and Maher Saqqur, MD, FRCPC

As presented at the Annual Vascular Days, Jasper, Alberta, October 2005.

Lifetime prevalence for any headache is 93% in men and 99% in women. Migraine is the second most common primary headache. Due to severity and associated symptoms, medical advice is sought more frequently for migraine than for tension headache, the most common primary headache type. Migraine is also more prevalent in women.

General principles of treatment

- An accurate diagnosis of the headache type is needed
- Determine the intensity of care needed (frequency, severity, associated symptoms)
- Determine the patient's previous use of medications and their response
- Determine the most appropriate setting for treatment (*i.e.,* hospital or outpatient, which depends on acuteness, dehydration, intractability *etc.*)

Jackie's case

- Jackie, 32, presents with a throbbing, right-sided headache.
- She is sensitive to light and noise.
- She is nauseated and vomited once.
- The headache was preceded by 25 minutes of visual disturbance of shimmering scotoma that started in the right visual field and gradually expanded.
- Jackie denies any other symptoms.
- She gave birth to a healthy baby girl two months ago.
- She has had similar headaches at least once a month since the age of 19 and usually takes ibuprofen or acetaminophen and retires to a dark, quiet room for relief.
- This time, Jackie did not take any medication, fearing its absorption into the breast milk.
- Her examination was normal.

For questions to consider, turn to page 87.

Copyright© Not for Sale or Commercial Distribution
Unauthorised ... Authorised users can download, print a single copy for personal use.

Table 1
Types of triptans

Name	Dosage	Half life
Sumatriptan	6 mg sugar-coated, 25 mg to 100 mg, oral (maximum 200 mg/day); nasal spray.	2 hours (high response rate with 100 mg)
Naratriptan	1 mg to 2.5 mg, oral. If needed, repeat in four hours up to a maximum of 5 mg/day.	5 to 6.3 hours (low recurrence)
Rizatriptan	5 mg to 10 mg, oral. Repeat in two hours (maximum 30 mg/day).	2 hours (recurrence high)
Zolmitriptan	1 mg to 2.5 mg, oral. Repeat in two hours (maximum 10 mg/day).	3 hours
Almotriptan	6.25 mg to 12.5 mg, oral. Repeat in two hours (maximum two doses/ day).	2 to 3 hours (high response rate)
Eletriptan	20 mg to 30 mg, oral. After 20 mg, second dose may be repeated in two hours.	3.6 hours

▶*Migraine*

Mild to moderate

Mild to moderate migraines can often be controlled with one of the non-steroidal anti-inflammatory drugs (NSAIDs)—ibuprofen, naproxen, ketorolac or acetylsalicylic acid (ASA). Acetaminophen is another very good option. A combination of an NSAID and acetaminophen may also be used. Antiemetics, such as metoclopramide and prochlorperazine, may relieve nausea and vomiting, and help lessen the headache. Analgesics need to be administered (in liberal dosages) early in the onset of the headache.

Dr. Khan is an Assistant Professor, University of Alberta, and Staff, University of Alberta Hospital-Stollery Children's Ctre WCM, Edmonton, Alberta.

Dr. Saqqur is Staff, Division of Neurology, University of Alberta Hospital, Edmonton, Alberta.

Questions about Jackie

1. What is the most likely diagnosis?
   a) Cluster headache
   b) Migraine with aura
   c) Tension type
   d) Atypical migraine
   e) Space occupying intra-cranial lesion
2. Which of the following analgesics should be used for her?
   a) Meperidine hydrochloride
   b) Acetaminophen
   c) NSAID
   d) Triptans
   e) Morphine

For Jackie's diagnosis, go to page 88.

Moderate to severe

Specific therapies for moderate to severe migraines include:

- Triptans—available in oral, nasal spray or parenteral preparations (Table 1)
- Dihydroergotamine mesylate (DHE)—available in a nasal spray or in a parenteral form
- Dopamine antagonist—used with prochlorperazine or metaclopramide to combat nausea and vomiting

A better clinical success has been reported with prochlorperazine (82%), compared to metoclopramide (46%).[1]

Narcotics should be avoided. There is evidence that narcotic analgesics do not provide lasting relief for headache.[2]

Intractable (status migrainosus)

Intractable migraine will almost always require parenteral pain therapy and in-patient care. Vital to the successful treatment of intractable migraine is the removal of triggering factors and psychologic and physiologic support.

Successful treatment includes:

- Intravenous (IV) rehydration of fluids
- DHE protocol:
  1. Pre-treat with IV prochlorperazine (10 mg) or IV metoclopramide, to prevent nausea/vomiting.
  2. IV DHE, 0.5 mg. Repeat 0.5 mg after one hour if the headache persists and there are no adverse effects.
  3. IV DHE, 0.75 mg to 1 mg, every eight hours for two to three days.

Other options include:

- IV dexamethasone, 4 mg to 10 mg.[3]
- IV valproic acid, 300 mg to 500 mg, in 100 cc of normal saline.[4,5]
- IV chlorpromazine, 12.5 mg to 25 mg, slowly, every eight hours, for two days. Close monitoring is needed, since acute hypotension can result. Extrapyramidal complications should be kept in mind.
- IV propofol has been shown to be effective in some intractable migraines.
- IV magnesium sulfate, 1 mg to 2 mg, over 15 minutes.

Trigeminal autonomic cephalalgias (TAC)

TAC is a group of primary headaches characterized by unilateral cranio-facial pain associated with prominant autonomic symptoms. This group of primary headaches includes:

1. Cluster headache
2. Paroxysmal hemicrania
3. Short unilateral neuralgiform headache with conjunctival injection and tearing (SUNCT).

Jackie's Diagnosis

- Jackie is suffering from migraine headache with aura.
- It is important to consider the secondary causes of headache, especially when the headache character changes or there is new headache onset in the peri-/postpartum period, old age or with focal neurologic deficit.
- Her concerns are valid about the medication excretion in the breast milk. However, analgesics like acetaminophen and ibuprofen are safe, especially when used episodically.
- Triptans can excrete in human breast milk and caution is advised during nursing period. Exposure to the infant can be minimized by avoiding breast-feeding for about 24 hours prior.

Table 2

Management of cluster headaches

Abortive	Preventive
100% pure oxygen, 7 L/m to 10 L/m for 20 minutes, in sitting/upright position; 60% response in 20 minutes	Prednisone (for a few days) plus verapamil, 120 mg to 480 mg, per day Lithium carbonate, 300 mg, twice daily
Sumatriptan, 6 mg (sugar-coated), is effective within 20 to 30 minutes	Valproic acid, 250 mg to 500 mg, twice daily
Nasal lidocaine, 4% to 6%, on the side of the cluster headache	Methysergide, 1 mg to 2 mg, three times daily
DHE, 0.5 mg to 1 mg, intravenous/intramuscular	
Butorphanol nasal spray	

DHE: Dihydroergotamine mesylate

Characteristics of cluster headaches

Cluster headaches are attacks of strictly unilateral headaches with some of the following autonomic features of conjectival injection: lacrimation, nasal congestion and/or rhinorrhea, ptosis/miosis and ipsilateral forehead or facial sweating lasting 15 to 18 minutes and occuring once every other day to eight times a day. Cluster headaches occur in a series (clusters) lasting weeks to months that are separated by remission periods lasting months to years (Table 2).

Paroxysmal hemicranias

Paroxysmal hemicranias are unilateral headaches with autonomic features and are shorter in duration than cluster headaches. Indomethacin is often effective (25 mg, three times daily).

SUNCT

SUNCT headaches are rare and much shorter in duration. They are more common in the male gender. A SUNCT headache can occur several times a day and may respond to indomethacin.

Tension type headache

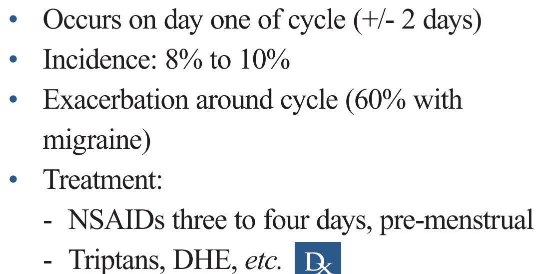
Tension type headache (TTH) is the most common type of primary headache. In contrast to migraine, the main pain features of TTH are bilateral location, non-pulsating quality, mild to moderate intensity and lack of aggravation by routine physical activity.

- NSAIDs—ibuprofen, naproxen, ASA, ketorolac
- Tricyclic antidepressants (amitriptyline, nortriptyline)

- Anti-convultants
- Selective serotonin reuptake inhibitors

Menstrual headache

Migraine attacks that are associated with menstruation are simply called menstrual migraine. Menstrual migraine occurs at the time of greatest fluctuation in estrogen levels. The prevalence ranges from 26% to 60%. Other features include:



- Occurs on day one of cycle (+/- 2 days)
- Incidence: 8% to 10%
- Exacerbation around cycle (60% with migraine)
- Treatment:
  - NSAIDs three to four days, pre-menstrual
  - Triptans, DHE, *etc.* Dx

References

1. Coppola M, Yealy DM, Leibold RA: Randomised, placebo-controlled evaluation of prochlorperazine versus Metoclopramide for emergency department treatment of migraine headache. Ann Emerg Med 1995; 26(5):541-6.
2. Colman I, Rothney A, Wright SC, et al: Use of narcotics analgesics in the emergency department treatment of migraine headache. Neurology 2004; 62(10):1662-3.
3. Todd D, Rozen MD: Migraine headache: Immunosuppressant therapy. Curr Treat Options Neurol 2002; 4(5):395-401.
4. Ninan T: Intravenous valproate sodium (depacon) aborts migraine rapidly. Headache 2000; 40(9):720-3.
5. Tobias L: Comparison of IV valproate with IV lysine-acetylsalicylic acid in acute migraine attacks. Headache 2005; 45(1):42-6.