

Migraine – A General Review – Summary Hand-Out

(Presented by Dr. Ravin N. Das, October 2001, IMA Hall)

Definition

(I.H.S – International Headache Society, 1988)

Defines migraine as –

Idiopathic, recurring headache disorder, manifesting in attacks lasting 4-72 hours, in which headaches are typically unilateral, throbbing, of moderate to severe intensity, aggravated by routine physical activity and accompanied by nausea, photophobia, phonophobia. May or may not be associated with aura.

I.H.S Classification of Migraine

- Migraine without aura (earlier called "common migraine")
- Migraine with aura (earlier called "classic migraine")
 - Migraine with typical aura
 - Migraine with prolonged aura
 - Familial hemiplegic migraine
 - Basilar migraine
 - Migraine aura without headache (also termed "acephalic migraine")
 - Migraine with acute onset aura
- Ophthalmoplegic migraine
- Retinal migraine
- Childhood periodic syndromes that may be precursors to or associated with migraine
 - Benign paroxysmal vertigo
 - Alternating hemiplegia
- Complications of migraine
 - Status migrainosus
 - Migrainous infarction
- Migrainous disorder not fulfilling above criteria

The following are NOT classified as migraine headaches –

(Not classified as a migraine category by the I.H.S, but are distinct and common/uncommon entities).

- Menstrual headaches – headaches present at the beginning of (within 2 days of onset), or through the period of menstruation, or after (within 2 days); associated with or without aura.
- Episodic or chronic tension-type headaches
- Analgesic-abuse headaches
- Cluster headaches
- Chronic paroxysmal hemicrania
- Post-traumatic headaches
- Headaches from Brain Tumours
- Idiopathic stabbing headache
- Cervicogenic headaches
- Cough headaches
- Coitus headaches
- Exercise induced headaches
- Hemicrania continua (a chronic continuous, fluctuating unilateral headache absolutely and rapidly suppressed by indomethacin).
- Postural headaches from lumbar punctures, dural rents, and shunts
- Sinus headaches
- Headaches in Giant Cell Arteritis (Temporal or Cranial Arteritis)
- Whiplash headaches
- Thunderclap headaches – include headaches of sudden, worst-severe headaches – caused by sub-arachnoid hemorrhage, "crash migraine", idiopathic and unclassifiable headaches, cerebral (or central) venous sinus thrombosis, un-ruptured arterial aneurysm at the circle of Willis, dissection of a carotid or vertebral artery, and also includes – benign exertional or coital headache.
- Trigeminal neuralgia
- Febrile headaches
- Hypoglycemic headaches

Diagnostic criteria (I.H.S)

(NB: aura is not considered a diagnostic criterion - but is used to classify the migraine)

1. At least 5 attacks
2. Headache attacks lasting 4-72 hours
3. Headache has at least 2 of the 4 characteristics
 - Unilateral location
 - Pulsating quality
 - Moderate or severe intensity (inhibits or prohibits daily activities)
 - Aggravation by walking stairs or similar routine physical activity
4. During headache at least one of the following accompaniments –
 - Nausea and/or vomiting
 - Photophobia and phonophobia
5. Other headache types not suggested or confirmed

Investigations?

According to the Quality Standards Committee of the American Academy of Neurology, 1994 – *In adult patients with recurrent headaches that have been defined as migraine... with no recent change in pattern, no history of seizures, and no other focal neurologic signs or symptoms, the routine use of neuroimaging is not warranted.*

Aura

Auras are idiopathic recurring disorders manifesting as attacks of neurological symptoms unequivocally localizable to cerebral cortex or brain stem, usually developing over **5-20 minutes and lasting less than 60 minutes**, and **followed or accompanied by** migraine headache and its associated features.

Pathogenesis – not known

1. Vascular Theory
2. "Migraine Generator" Or "Pacemaker" Theory
3. Cerebral Vascular (Blood Flow) Changes
4. Ion Channel Theory

Inference

These new theories put together provide rationale for combining two or three different types of medications

to achieve more effective, long-lasting relief – for example, a medication that works on the neurotransmitter serotonin, coupled with an anti-inflammatory medication that could curtail some of the inflammation provoked by the trigeminovascular system.

Triggers in migraine

Edibles

1. Alcohol, Red Wine
2. Cheese & Old home-made cheese
3. Veg. and Non-veg. pickles
4. Smoked Fish
5. Sour cream
6. Curds & yogurt
7. Yeast and yeast preparations
8. Chocolates
9. Cigars and Cigarettes
10. Citrus fruits
11. Butter
12. Onions, raw tomatoes, tamarind
13. Nuts
14. Beans
15. Tea and coffee
16. Oily foods
17. Preservatives (Class 2)

Environment

1. Bright lights, flickering lights
2. Fluorescent lighting
3. Perfumes, strong smells
4. Environmental pollution
5. Industrial pollution
6. Sudden changes in atmospheric temperature
7. Long journeys

Life-style

1. Mental or physical exertion
2. Lack of, or excessive sleep
3. Extremes of mood
4. Death, mourning
5. Untimely meals
6. Smoking
7. Drinking
8. Drug-abuse

Medicines

1. Anti-hypertensive medications
2. Nitroglycerines
3. Diuretics
4. Amilophylines, and anti-asthma medications
5. Analgesic-abuse

Hormones

1. Intercourse - sexual
2. Menses
3. Pregnancy
4. Delivery
5. Drugs used for inducing abortion
6. Contraceptives
7. HRT

Miscellaneous

1. Head and neck injury
2. Diagnostic injections
3. Spinal anesthesia
4. Cervical arthritis

Source:

Migraine The Complete Guide American Council For Headache Education, Copyright 1994... and other sources.

Compiled by Dr. Ravin N. Das on 23 January 1999.

Ophthalmoplegic migraine –

Refers to a type of migraine that is associated with ocular motor nerve anomalies, such disturbances occurring at the height of the headache and *not preceding the onset of the headache*. Usually fully reversible and does not last for more than one hour. Ptosis, diplopia, and photophobia commonly occur.

Sir Stewart Duke Elder defines Ophthalmoplegic migraine as – a clinical syndrome characterized by an association of severe headaches with recurrent ocular palsy which tends to recover only to relapse subsequently and finally may become permanent. Also called *Mobius' disease; trigemino-ophthalmoplegic syndrome*.

Retinal migraine –

This rare form of migraine is more common in younger individuals (under 10 years of age for oculomotor nerve) (and adolescents and young adults in case of retinal vessel spasm, usually with history of typical migraine disturbances).

The vasospastic phase of the migraine may affect the optic nerve or retinal vessels, wherein temporary or permanent spasm of the retinal vessels may lead to temporary or permanent field defects corresponding to the area of ischemic retina. When the loss of vision is complete and temporary the clinical picture of "amaurosis fugax" is described. It is frequently noted with evidence of vasomotor instability elsewhere, such as migraine, menstrual and ovarian disturbances, reflex factors such as vaginal douching, antral wash, changes of posture, and toxic influences such as influenza, malaria, zoster and toxemia of pregnancy. Exogenous poisons like lead, alcohol, tobacco and quinine and its derivatives may also be responsible and have to be

ruled out. Frequently evidences of angiospasm in other regions are noted in addition to migraine, like temporary loss of hearing,

Basilar migraine

Also called – **Basilar artery migraine (BAM), Posterior fossa migraine, Bickerstaff syndrome (1961), vertebro-basilar migraine, vertebro-vascular migraine.**

Refers to a disturbance whose symptoms may be attributed to vasospasm within the distribution of the basilar artery. Cortical visual disturbances such as hemianopias or bilateral visual loss, diplopia, ataxia, paresis, and paresthesia are such symptoms. Basilar migraine occurs more commonly in adolescent girls. There is usually a positive family history for the illness. There may occasionally be loss of consciousness if the reticular activating system is involved.

Cluster headaches

(Alias – Histamine cephalalgia, Horton's syndrome, Raeder's syndrome and Haris' neuralgia)

More common in young males (2nd to 3rd decades), in the fronto-temporal region, associated with epiphora on the same side, nasal congestion or watering, and conjunctival hyperemia. There may be associated sympathetic miosis or/and ptosis.

Characteristically occurring in clusters over a few weeks, and then disappearing for the rest of the year. Thus may **mimic** seasonal variation.

Therapy of migraine

Alleviatives and abortives

Patients with **mild to moderate headaches** respond well to –

1. Aspirin
2. Acetaminophen
3. Ibuprofen
4. Caffeine
5. Naproxen sodium

The above can be used singly or in combinations such as –

1. Caffeine – acetaminophen
2. Caffeine – acetaminophen – aspirin
3. Aspirin – metoclopramide
4. Acetaminophen – ibuprofen

Patients with **moderate to severe headaches** respond well to –

1. Aspirin with metoclopramide
2. Dihydroergotamine and other ergotamines
3. Sumatriptan – sub-cutaneous/oral and other triptans
4. Ergotamine + caffeine
5. Opioids – should not be prescribed as a first line treatment for acute pain due to the chances of addiction and abuse.
6. Tranquilizers – chlorpromazine, prochlorperazine, haloperidol and droperidol have the advantage of anti-nausea effect; but have to be administered IM or IV.
7. Isometheptene
8. Lidocaine nose drops – considered more effective than placebo.

Preventives

Indicated when 2 or more migraine attacks occur per month. The choice of the initial and subsequent preventives to prescribe should be based on the patient's physical and mental condition and associated symptoms. For example, a patient subject to down moods and insomnia would be more suitable for amitriptyline than propranolol, for the former lifts mood and promotes sleep, whereas the latter may induce depression.

1. Propranolol – good for nervous patients, contraindicated in asthmatics and should not be used in diabetics. Dose 40-240 mg increased gradually monitoring pulse, blood pressure and side effects such as tiredness (exercise intolerance) and depression.
 2. Amitriptyline – tricyclic anti-depressant – start with a small bedtime dose of 10 mg in women and 25 mg in men, increased every few weeks as needed and tolerated. Sedation, oral dryness, tachycardia, and weight gain from increased appetite. Given reluctantly to the obese. Good for patients with down mood or insomnia.
 3. Divalproex – anti-epileptic – starting with 250 mg BD – not to be used in pregnant women and in the presence of hepatic disease. For long term therapy liver function has to be monitored regularly.
 4. Calcium channel blockers – Flunarizine, Cinnarizine, Verapamil, and Nifedipine – weight gain and sedation (initially). Flunarizine is prescribed @ 10 mg at bedtime for body weight > 40 kg and 5 mg for body weight < 40 mg.
 5. Magnesium
 6. Cyproheptadine
 7. Fluoxetine
 8. Aspirins and NSAIDS – as good as placebos in prevention of migraine
 9. Roboflavin (B2) – large dose of 400 mg daily.
 10. Oestrogen – in case of menstrual migraine, 2 days before to 2 days after the menstrual period.
 11. Lisinopril
1. **Biofeedback and relaxation training.** Drug therapy for migraine is often combined with biofeedback and relaxation training. Biofeedback refers to a technique that can give people better control over such body function indicators as blood pressure, heart rate, temperature, muscle tension, and brain waves. *Thermal biofeedback* allows a patient to consciously raise hand temperature.