

# **HEADACHE AND OTHER CRANIOFACIAL PAINS**

*Prof. M. Gavriiuc*



## MODERN CLASSIFICATION of HEADACHE

Most of the research work published in the past was difficult to interpret because there were no clearly defined criteria established for the diagnosis of different types of headache. This problem was addressed by the International Headache Society (IHS) in 1988 when the "Classification and Diagnostic Criteria for Headache Disorders, Cranial Neuralgias and Facial Pain" was published.

- 1. Migraine**
- 2. Tension-type Headache**
- 3. Cluster Headache and Chronic Paroxysmal Hemicrania**
- 4. Miscellaneous headaches unassociated with structural lesions**
- 5. Headache associated with head trauma**
- 6. Headache associated with vascular disorders.**
- 7. Headache associated with non-vascular intracranial disorder**
- 8. Headache associated with substances or their withdrawal**
- 9. Headache associated with non-cephalic infections.**
- 10. Headaches associated with metabolic disorders**
- 11. Headache or facial pain associated with disorder of cranium, neck, eyes, ears, nose, sinuses, teeth, mouth or other facial or cranial structures.**
- 12. Cranial neuralgias, nerve trunk pain and deafferentation pain**
- 13. Non-classifiable Headache**

# Pain-Sensitive Cranial Structures

Only certain cranial structures are sensitive to pain:

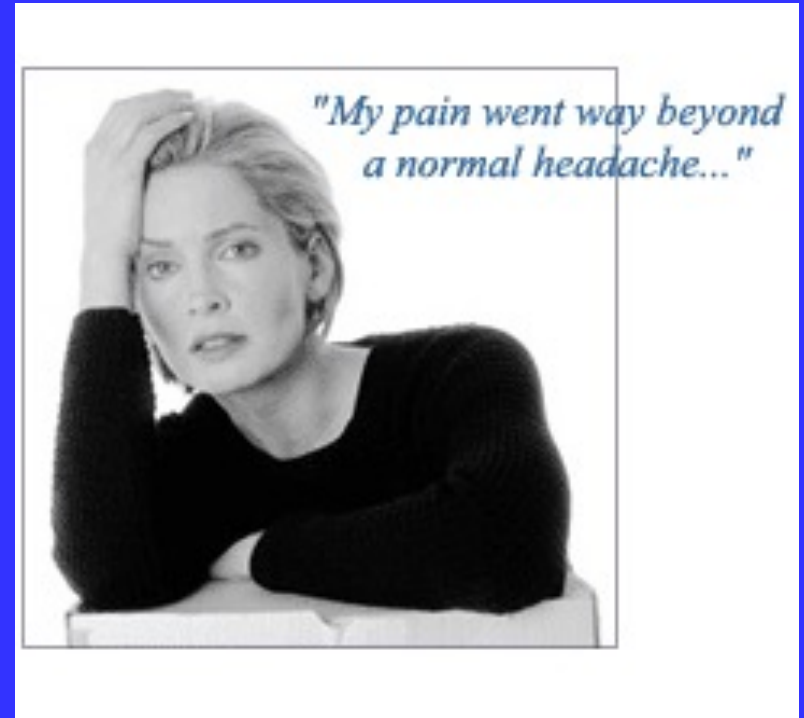
(1) skin, subcutaneous tissue, muscles, extracranial arteries, and periosteum of the skull; (2) delicate structures of the eye, ear, nasal cavities, and sinuses; (3) intracranial venous sinuses and their large tributaries, especially pericavernous structures; (4) parts of the dura at the base of the brain and the arteries within the dura and pia-arachnoid, particularly the proximal parts of the anterior and middle cerebral arteries and the intracranial segment of the internal carotid artery; (5) the middle meningeal and superficial temporal arteries; and (6) the optic, ocular motor, trigeminal, glossopharyngeal, vagus, and first three cervical nerves. Interestingly, pain is practically the only sensation produced by stimulation of these structures; the pain arises in the walls of small blood vessels which contain pain fibers (the nature of vascular pain is discussed further on).



# Migraine

## Epidemiology

Contemporary data show that the frequency of migraine is much higher than suggested by earlier studies—18% to 29% in women and 6% to 20% in men. The first bout evolves prior to age 40 years in about 90% of patients, with approximately half of the cases appearing during childhood or adolescence. Before puberty, the prevalence of migraine is slightly higher in boys than in girls. Prevalence increases until approximately age 40, after which it declines.



Adult women are at greater risk for the development of migraine than adult men, but estimates for the female-to-male ratio vary from approximately two to one to approximately three to one. Marital situation, intelligence, educational level, occupational category, and employment situation are not correlated with migraine, but it appears that migraine is more frequent in individuals from lower income groups.



# Migraine

A bout of migraine may commence at any time of the day or night. An intense pounding headache may awaken some individuals from sleep; other individuals detect a headache on awakening. Still others develop an episode gradually as the day progresses. The frequency of attacks also differs among individuals. For example, over half of clinic patients are estimated to endure one or more attacks a month. In contrast, some individuals only suffer two or three bouts during their lives.



# Migraine

The typical attack of migraine consists of a sequence of events that include

- (1) prodrome,
- (2) aura,
- (3) headache,
- (4) resolution, and
- (5) postdrome .

In an individual migraineur, however, the attributes of a specific bout can vary from a limited number of symptoms to a severe siege in which the entire spectrum of the disorder is present.



*Cured - Robert Zammerarchi*



# Migraine

Approximately 25% of migraineurs detect an assortment of premonitory symptoms (prodromes) that are the initial events in the attack. These frequently vague symptoms can precede the aura or head pain by several hours or even by days. Prodromal symptoms typically include changes in mood or behavior (eg, irritability, depression, sluggishness, anxiety, apathy, euphoria, excitement), neurologic symptoms (eg, excessive yawning, phonophobia and photophobia, blurred vision), constitutional symptoms (eg, excessive fatigue, pallor, aching



muscles, fluid retention), and alimentary symptoms (eg, hunger, craving for food, bulimia, nausea, anorexia). Prodromal symptoms vary widely among individuals, but they are often consistent in a particular migraineur.

# Migraine

The absence or presence of an aura—an episode of focal, transitory neurologic dysfunction—in the preheadache phase of a migraine attack distinguishes common migraine (migraine without aura) from classic migraine (migraine with aura). Neurologic symptoms usually develop over 5 to 20 minutes and last less than 60 minutes.

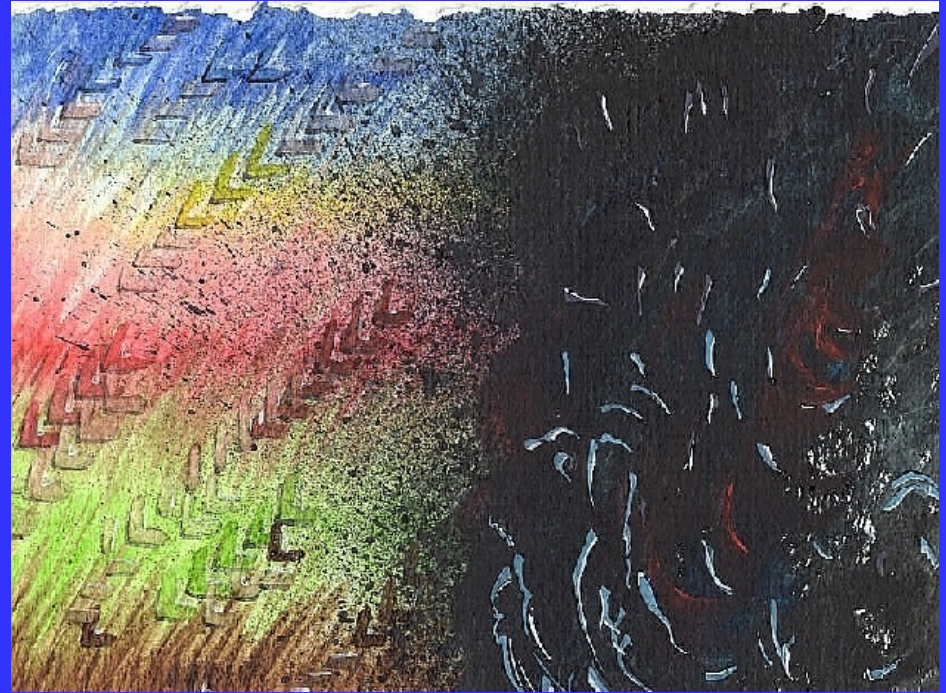
Approximately 80% of migraine sufferers have common migraine. About 70% of patients with classic migraine also have attacks without aura.





# Migraine

Neurologic symptoms usually develop over 5 to 20 minutes and last less than 60 minutes. The most common auras are visual, but an aura may consist of essentially any neurologic symptom. Visual auras are of two types: positive visual phenomena with hallucinations and negative visual phenomena (scotomas) with either incomplete or complete loss of vision in a portion or the whole of the visual field. Most visual auras have a hemianoptic distribution.



# Migraine

Photopsias are the simplest type of visual hallucination, usually consisting of small spots, dots, stars, unformed flashes or streaks of light, or simple geometric forms and patterns that typically flicker or sparkle. Scintillating scotomas (also called teichopsias or fortification spectra) are considered to be the most distinctive migrainous visual symptom. Such scotomas consist of a scotomatous arc or band with a shimmering or glittering, bright, zigzag border. The visual alteration usually commences in the center of the visual field and slowly extends laterally. The scotoma frequently is semicircular or horseshoe-shaped. On occasion, objects may appear to change in size and shape.



# Migraine

Patients may also have somatosensory auras consisting of circumscribed feelings of numbness or sensations of tingling or pins and needles involving the ipsilateral hand, face, and tongue (cheiro-oral or digito-lingual paresthesias). Minimal, brief hemiparesis is not uncommon, but prolonged, severe paresis is a rare aura. Dysarthria and aphasia may be associated with paresthesias or hemiparesis in some patients, or aphasia may occur as an isolated phenomenon.



True rotational vertigo frequently constitutes a migraine aura. In some individuals, one type of aura may follow another (eg, somatosensory symptoms may occur as visual symptoms disappear).

# Migraine

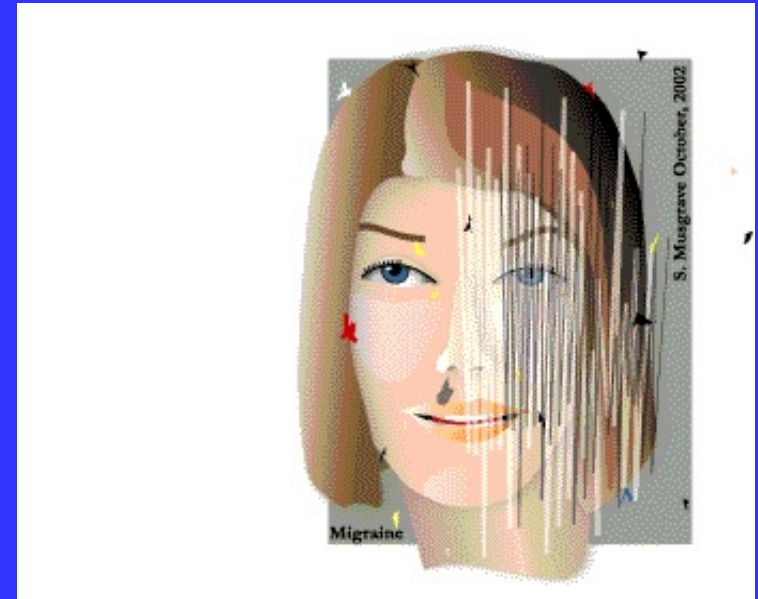
The headache phase of the bout follows the aura and varies from mild discomfort to intense and disabling. The pain of migraine is typically described as throbbing or pulsating. But the pain of fewer than half of adult migraineurs has a pulsating quality. The head pain can last from a few hours to several days, but it persists for less than a day in most patients. The unilateral nature of the headache has been stressed, but migrainous head pain is unilateral in only 56% to 68% of patients.





# Migraine

The pain may be bilateral at the onset of the attack or begin on one side and become generalized as the bout continues. In patients with unilateral pain, the side affected in different attacks may vary or may invariably be the same in each attack. The pain is usually located in the frontotemporal region of the head or in, around, or behind an eye. But any region of the head or face may be affected including the parietal region, the upper or lower jaw or teeth, the malar eminence, or the upper anterior neck. Migrainous pain is typically diminished by lying or sitting still and is increased by any activity or effort or by any active or passive head movement.



# Migraine

Intolerance of light (photophobia) and noise (phonophobia) are the most frequent symptoms accompanying the head pain. As a result of these symptoms, most patients seek a quiet, dark room. Approximately 90% of patients experience nausea, and vomiting affects more than half of migraineurs.



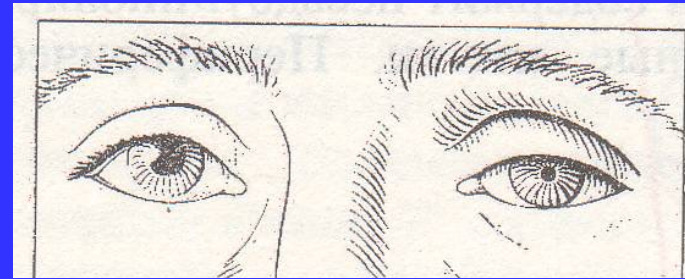
©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Serving Time* - Nancy Ellen Wheeler

Other gastrointestinal symptoms are common and include anorexia, diarrhea, constipation, and abdominal distension and cramps.

# Migraine

Other patients complain of blurry vision, facial pallor, edema that is most prominent in the temporal and periorbital lobes, nasal congestion, cold and clammy hands and feet, and polyuria. Ptosis and miosis (Horner's syndrome) have been observed during the height of an attack in some individuals, but in rare patients the pupil dilates on the side of the head pain.



# Migraine

Many migraineurs suffer from changes in their psychological and mental state during an attack. Many feel depressed; others feel irritable and hostile. Many are lethargic, drowsy, or irresistibly sleepy. Minor cognitive changes are common during migraine attacks and include reduced ability to concentrate, mildly decreased memory, and difficulty with abstract thought.



©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Mentally Insufficient - Angela Mark*



# Migraine

In most migraineurs, the pain gradually diminishes over a period of hours, but many migraine attacks are concluded by sleep. Many migraineurs have a postdromal period after a headache lasting several hours to several days. Patients may feel fatigued, weak, listless, or lethargic, although some feel refreshed or even euphoric.



# Diagnostic Criteria for Migraine Without Aura (Common Migraine)

- At least five attacks lasting 4 to 72 hours
- Headache has at least two of the following characteristics:
  - unilateral location
  - pulsating quality
  - moderate or severe intensity
  - aggravation by routine physical activity
- At least one of the following during headache:
  - nausea or vomiting
  - photophobia and phonophobia
- Normal neurologic exam and no evidence of organic disease that could cause headaches



*Hierboven "Buste van een vrouw" van Pablo Picasso, van wie men vermoedt dat hij aan migraine leed*

# Diagnostic Criteria for Migraine with Aura (Classic Migraine)

- At least two attacks
- Aura must exhibit at least three of the following characteristics:
  - fully reversible and indicative of focal cerebral cortical or brainstem dysfunction
  - gradual onset
  - lasts less than 60 minutes
  - followed by headache with a free interval of less than 60 minutes or headache
  - may begin before or simultaneously with the aura
- Normal neurologic exam and no evidence of organic disease that could cause headaches



*Headache I - Heidi Tobler*

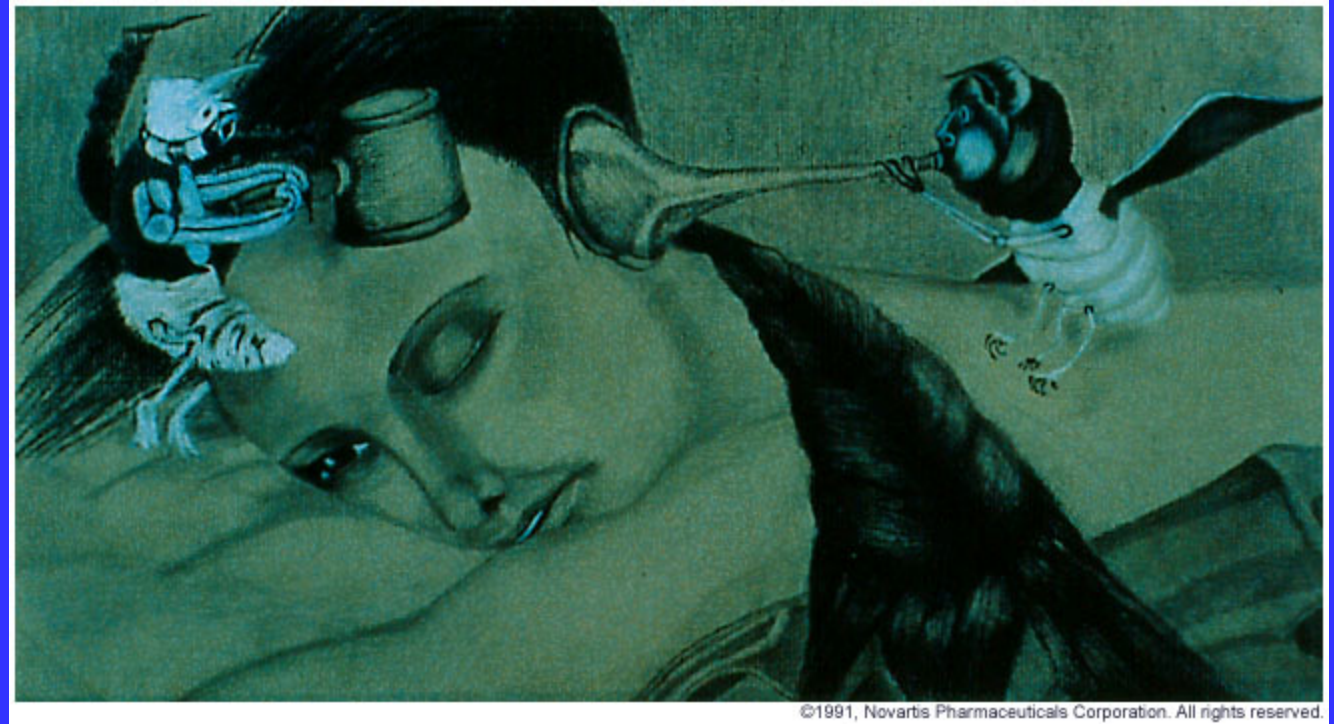


# Migraine

## Differential Diagnosis

Tension-type  
headache and  
cluster headache

must be differentiated from migraine. The International Headache Society promulgates clear-cut criteria for tension-type headache that differentiate it from migraine, but there is ongoing debate regarding the relationship between the two disorders.



©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Migrain Duet - Jeanette  
Abulafia*



# Migraine

## Management

The management of patients with migraine headaches consists of several major components:

- 1.** The prevention of bouts by identification and removal of known trigger factors. Determination of trigger factors is fundamental for effective migraine management because many headaches may be prevented if a particular migraineur abstains from alcohol, eliminates chocolate, stops contraceptive pills, obtains adequate sleep, or ingests three regular meals a day.

- 2.** The use of nonpharmacologic treatments. Behavioral procedures including biofeedback (both thermal and electromyographic), simple relaxation therapy, autogenic training, and programs teaching cognitive stress coping skills have been used successfully in migraineurs.



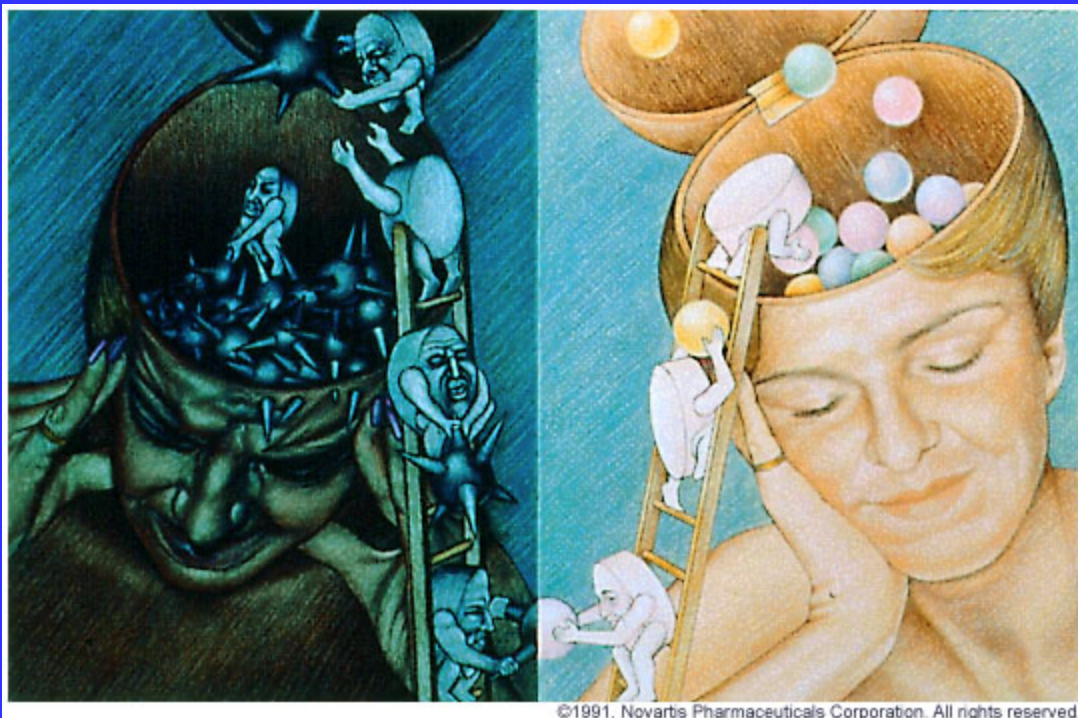
*Take Two Aspirin and...* -  
Edward LeSage

# Migraine

## Management

3. The pharmacologic treatment of acute attacks. Simple analgesics and nonsteroidal anti-inflammatory drugs are capable of reducing pain in many patients suffering from acute migraine attacks. Ergots (cafergot, dihydroergotamine) are a mainstay of symptomatic

treatment, but the efficacy of sumatriptan (Imitrex) and other newer triptans (naratriptan, [Amerge], rizatriptan [Maxalt], zolmitriptan [Zomig]) has changed that role. Narcotics and analgesic/sedative drugs should only be prescribed infrequently and in small quantities. They should be used for a maximum of 2 to 3 days per week. The use of steroids for the treatment of acute attacks should be discouraged because of the cumulative nature of some of the side effects such as osteonecrosis.



©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Relief - Deborah Barrett*

# Migraine

## Management

4. The long-term treatment with prophylactic medication to prevent recurring bouts. A considerable number of potent medications (beta-blockers such as propranolol and nadolol, calcium channel blockers such as verapamil and diltiazem, antidepressants such as amitriptyline and prozac, anticonvulsants such as valproic acid and gabapentin, and antiserotonergics such as methysergide) are available for the prevention of attacks of migraine.

Preventive medications are capable of decreasing the frequency and severity of migraine in most migraineurs.

All preventive drugs have side effects, however, and should be prescribed with circumspection. Authorities disagree about guidelines for administering preventative medication. Some physicians prescribe prophylactic drugs for patients who have more than one headache each month. Others feel that daily medication is warranted only if the frequency is greater than one headache per week.



*Visual Headache* - Annette  
LeBlanc

©1991, Novartis Pharmaceuticals Corporation. All rights reserved.



# Migraine

## Management

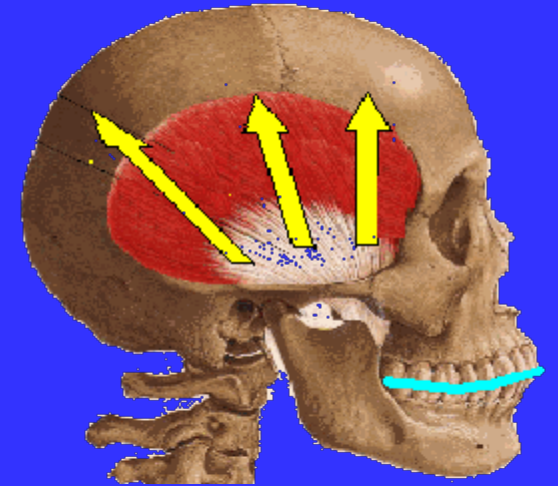
All preventive drugs have side effects, however, and should be prescribed with circumspection. Authorities disagree about guidelines for administering preventive medication. Some physicians prescribe prophylactic drugs for patients who have more than one headache each month. Others feel that daily medication is warranted only if the frequency is greater than one headache per week.



*Splitting Headache - Linda McCarthy*

# TENSION-TYPE HEADACHE

Tension-type headache falls into two distinct categories, which can be specified as (1) localized head pain (conforming to International Headache Society classification 2.1.1 and 2.2.1) and (2) head pressure awareness (conforming to International Headache Society classification 2.1.2 and 2.2.2).

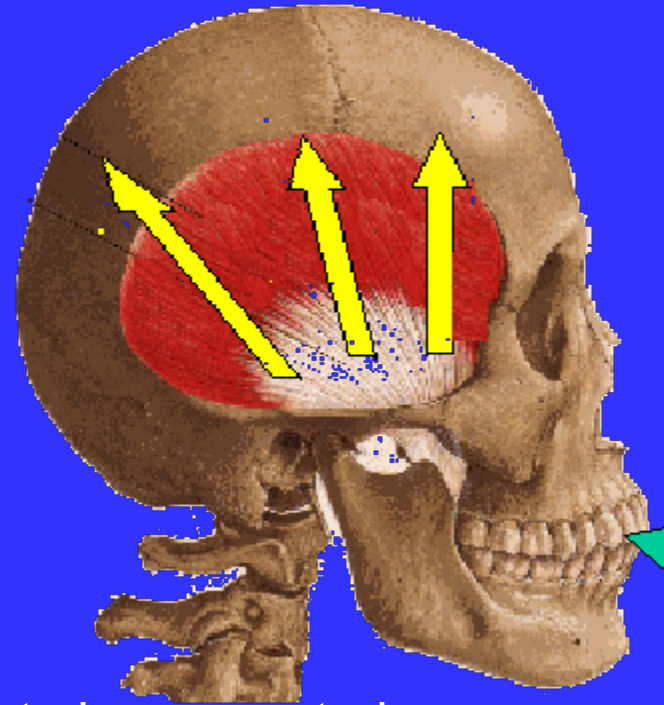


"Localized head pain" (International Headache Society classification 2.1.1. and 2.2.1) is comparable with osteoarthritic pain; symptoms arise from the synovium, ligaments, or muscles moving that joint. The pain is affected by movement and rest, showing diurnal variations and responding in varying degrees to analgesics in the time corresponding to drug absorption. The joints causing this type of headache are the upper cervical (apophyseal) and the temporomandibular joints, each with their own patterns.

# TENSION-TYPE HEADACHE

The history extending over months or years is of headache present initially on awakening or on coming home after work and lasting several hours; later the pain can become continuous but, even then, manifests diurnal varying intensities. The distribution is indicated by the patient with the index finger or the palm of the hand affecting one or both sides of the head, less frequently across the forehead;

indication of neck pain or stiffness usually has to be requested specifically. Starting in the neck or the occiput, the pain sweeps forward over the parietal region to the temple or forehead, or travels in the opposite direction. Some indicate a line accurately outlining the origin of the temporalis muscles, others the anterior fibers of that muscle at the temple.



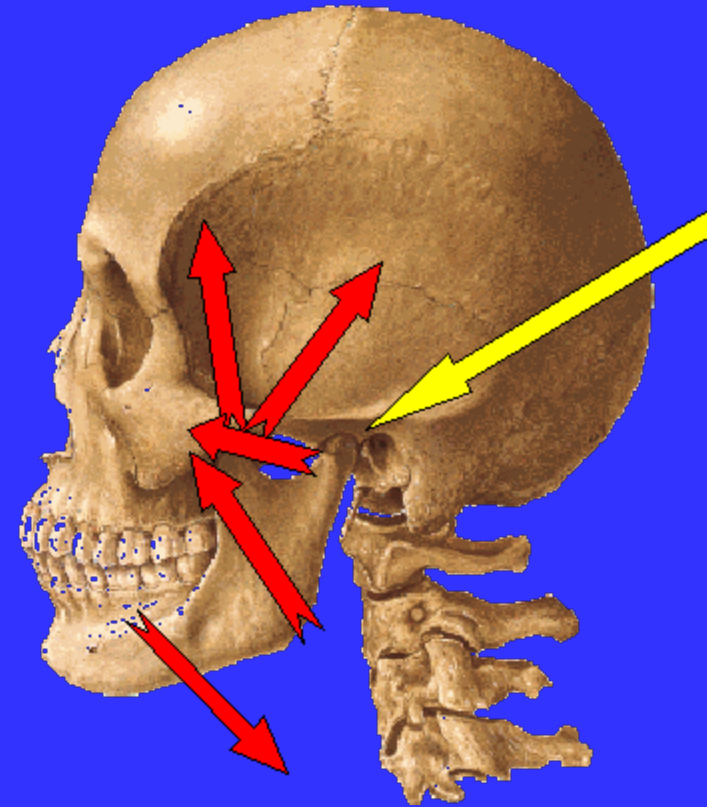
# TENSION-TYPE HEADACHE

The patient has usually noted local tenderness, eased or increased by finger pressure. Heat when showering gives temporary relief, but cold, especially icy wind, accentuates the regional pain. Neck movement influences the symptom of pain arising from that region, but neck crepitus, whiplash injury, or limitation of neck movements (especially when reversing the car) need inquiry. If the pain is predominantly in the temple or forehead, the physician needs to ascertain whether there is bruxism, impacted wisdom teeth, or jaw clicking. Neck pain often extends along the upper fibers of the trapezius to one or both shoulders, whereas temporalis muscle pain spreads downward in front of or behind the ear. Corroborative evidence for organic pain origin derives from the response to analgesics: partial or total relief in less than an hour, commonly in 20 to 30 minutes. Most of the history needs to be taken by direct (but not leading) questions, because patients do not know what is relevant.



# TENSION-TYPE HEADACHE

Physical examination is directed by the history: if to the neck, then local unilateral or bilateral muscle tenderness, discomfort, or crepitus on neck movements, especially restricted on lateral flexion, are present. Precise features to look for in examination of the neck were recently specified by the International Study Group on Cervicogenic Headache . When the pain is anterior, the temporomandibular joints may be tender, crepitus or clicking may be heard through a stethoscope, and jaw malalignment or an overbite may be present; then it is worthwhile asking about comments by the patient's dentist, who may have mentioned excess tooth wear from bruxism not recognized by the patient.





# TENSION-TYPE HEADACHE

The history extending for months to years is vague. Head symptoms are initially intermittent, but later occur 7 days a week, from the moment of waking until sleep is attained. The sensation is symmetrical, likened to a weight on the vertex or a band around the head, less frequently a tightness across the forehead. In describing the sensation the patient waves a hand vaguely around the head, in contrast to the precise indication given by patients with type I

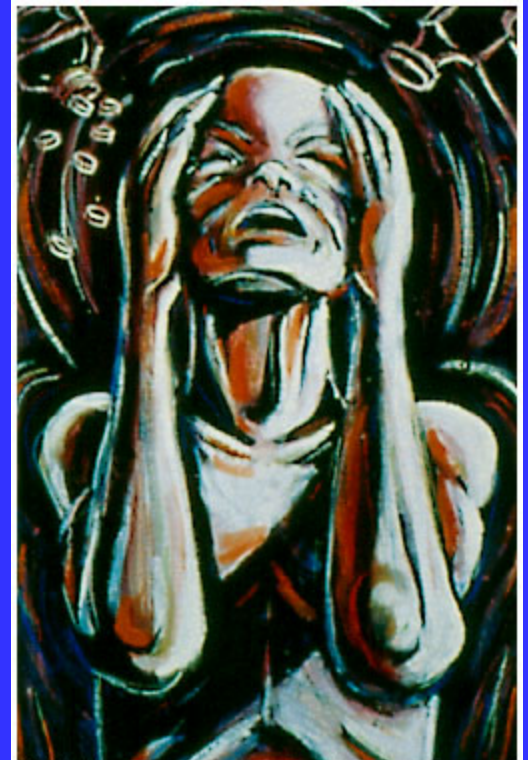
headache. Nothing relieves the ache except when the mind is diverted by some activity or sleep; exacerbations are provoked by stress or an argument. If the patient is asked to describe the pain, "it is not a pain, it is an ache" is the usual reply; if asked whether the headache is a pain or a pressure, "it is a pressure" is the more usual response. Two analgesic tablets taken regularly three or four times daily have "no effect whatsoever," yet continue to be consumed for months in the vain hope that "they might work" or because "you've got to do something."



# TENSION-TYPE HEADACHE

Direct questioning may disclose fears of organic diseases (usually brain affections) or financial, social, personal, or academic problems, indicating the cause of the underlying anxiety state. In children, parental anxiety or bullying at school needs sensitive inquiry. In others, asking about depression provokes the response that the condition is "getting me down"; tears well up, and there may be crying.

Formal neurologic examination reveals a normally functioning nervous system, but the demeanor of the patient during the interview indicates anxiety or depression or an agitated depression.



©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Here It Comes Again -  
Gerard Mackay*

# TENSION-TYPE HEADACHE

A typical visit to the doctor's office would go as follows:

Q. How long have you had your headache?

A. A long time.

Q. Would you say 1 month, 6 months, or a year?

A. Longer than that.

Q. Where is it?

A. All over (waving hand vaguely over the top of the head).

Q. What is the pain like?

A. It is not a pain it is a pressure.

Q. When do you get it?

A. All the time—from when I wake to when I go to sleep.

Q. What do you take for it?

A. I have tried everything, nothing helps.

Q. What are you taking now?

A. Six to eight acetaminophen tablets a day.



©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Headache - John Crowley*

# TENSION-TYPE HEADACHE

Q. Does this do any good?

A. (Promptly and vehemently) Not a bit.

Q. How long have you been taking six to eight tablets a day?

A. For 6 months.

Q. If it's not working then why are you taking them?

A. (pause) Well you've got to do something haven't you. Or, Well it might help.

At the end of the history, when inquiring about sleep difficulties it is common to learn that the patient has difficulty going to sleep and staying asleep.



*13 Year Old Headache - Val Akula*



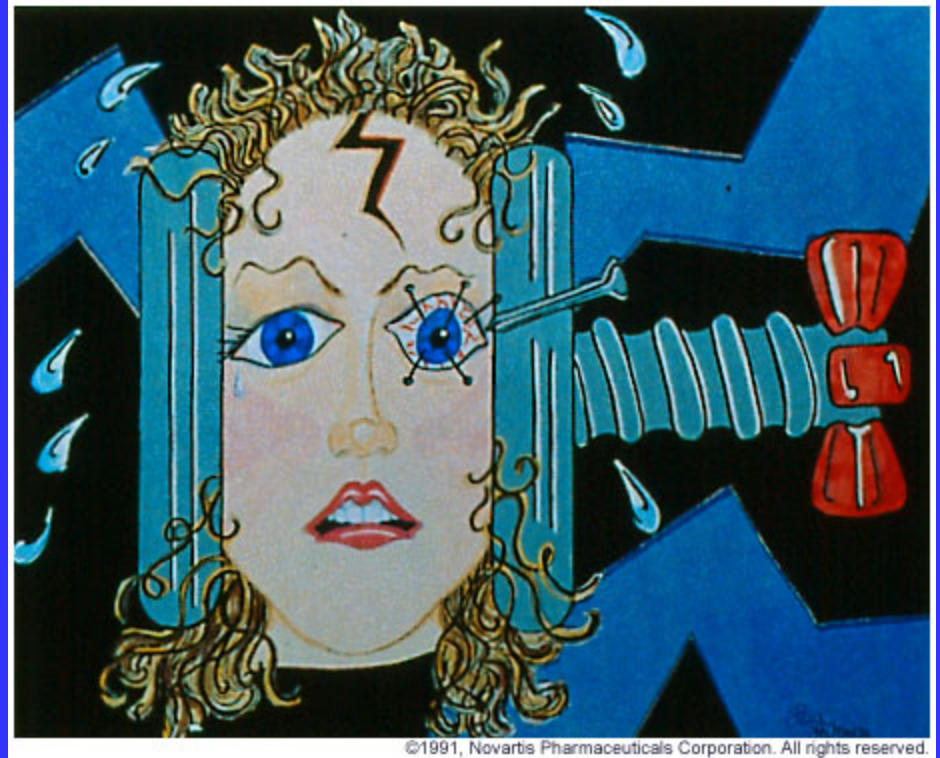
# TENSION-TYPE HEADACHE

## Diagnostic Workup

In cases of localized head pain, brain scan may be necessary to reassure the patient or physician, although the test is usually a waste of the patient's or insurance company's money.

Some individuals cannot tolerate the investigation because of claustrophobia. Anemia can contribute to headache, and many menstruating women are on the borderline of anemia, so a blood count needs to be considered.

An ESR excludes most cases of temporal arteritis and may be elevated in other systemic diseases, especially those with pyrexia. Rarely can a plain skull x-ray, including the base, reveal a secondary neoplasm, a myeloma deposit, or a pituitary tumor.



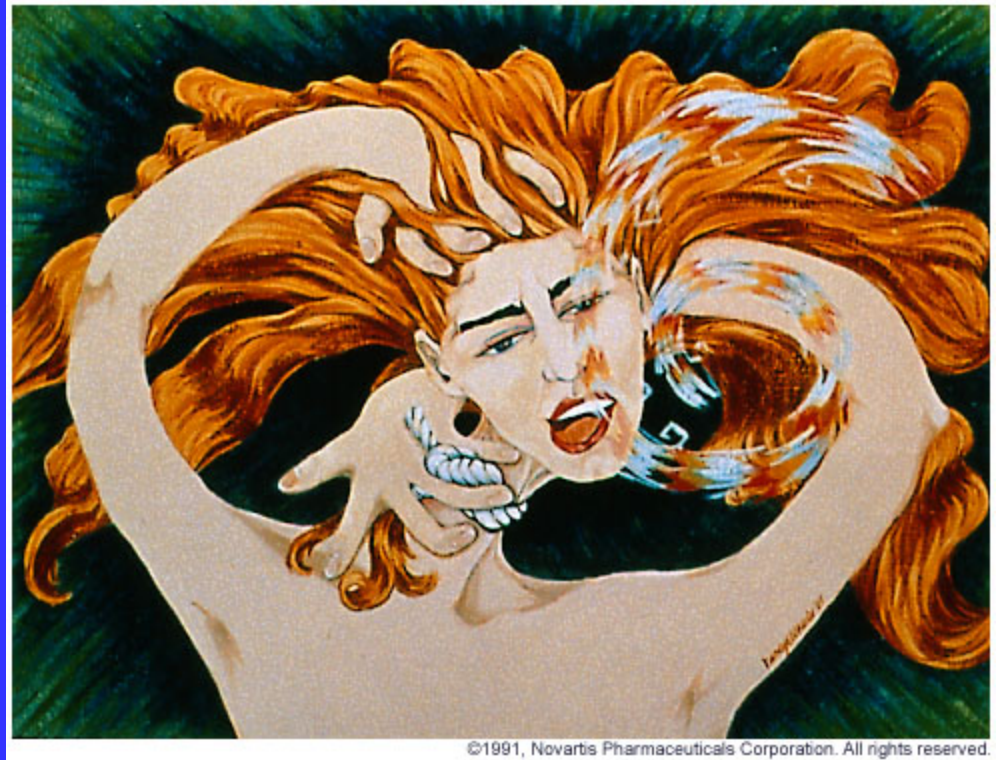
©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Denatured Tension - Lisa LaMotte*

# TENSION-TYPE HEADACHE

## Management

The first line of treatment is an explanation of the condition in words that the patient will be able to understand, bearing in mind that few can retain more than three facts in any learning session. Simple analogies applicable to the patient's daily activities help; emphasis that the pain is genuine and not imaginary or "in the mind," even when caused psychologically, is essential. Further, "pinched" or "nipped nerves" or vessel obstruction by muscular contraction are often voiced fears that need to be allayed gently, not dismissed or denigrated.



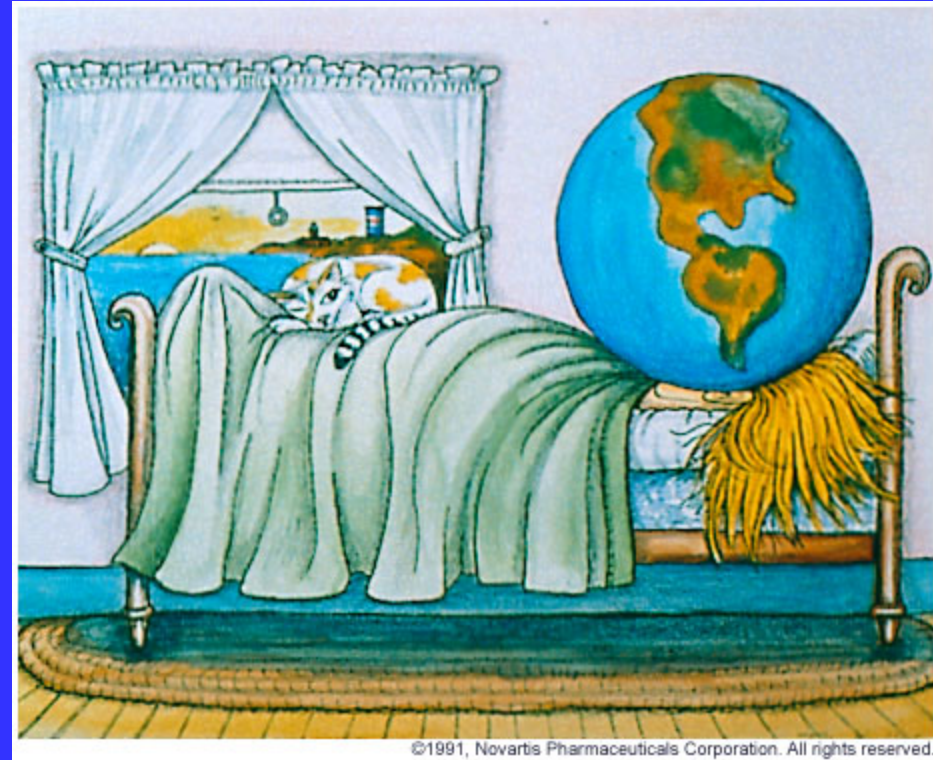
©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Twisted Mother - Nancy Ellen Wheeler*

# TENSION-TYPE HEADACHE

Pharmacological preparation against anxiety and depression may be necessary but should be prescribed for a limited period only. Others favor diverse relaxation therapies, with or without biophysical measurements made visible or audible to the patient.

Depression, if mild and recent, can be treated by neurologists; when severe or long-standing, psychiatric help is needed, the degree of urgency depending on clinical assessment.



©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Morning Heavyhead - Julia Knowlton*



# CLUSTER HEADACHE

Three major forms of cluster headache are recognized, namely, episodic and chronic varieties and the variant, chronic paroxysmal hemicrania . The terms used in describing cluster headache include "attack," meaning individual attacks of headache pain; "cluster period," meaning the period of time during which patients have repeated attacks; "remission," indicating periods of freedom from attacks; and "mini bouts," designating bouts of attacks that last for less than 7 days.



*Loneliness, Pain, Tears - Denise Auger*

The attack profile consists of the rapid onset of headache that builds up to a peak in about 10 to 15 minutes and lasts for approximately 30 to 45 minutes. The headache is almost always unilateral.



## CLUSTER HEADACHE

The most common site of pain is orbital, retro-orbital, temporal, supraorbital, and infraorbital in order of decreasing frequency. On occasion the head pain may switch sides, and in extremely rare cases it can be bilateral. Typically the pain is in the trigeminal nerve distribution, even though extratrigeminal pain, especially in the suboccipital area, is known to occur in 18% to 20% of attacks. The number of attacks per day varies from one to three, but the range can be from one a week to eight or more per day. During the attacks, patients find it difficult to lie down as this position can aggravate the pain. Patients usually pace the floor, or sit up assuming postures that give them maximum relief. Patients may behave in an uncontrolled and bizarre way; they may moan, cry, yell, or scream and may even threaten suicide. Some patients find relief by physical exercise such as jogging in place. The pain is so excruciating that after attacks patients remain exhausted for some time.



©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Attention Headache -  
Merana Cadorette*

# CLUSTER HEADACHE

Neurologic examination may reveal mild ptosis and miosis on the side of the headache, especially during the attack or immediately following. Ipsilateral tenderness of the carotid artery, periorbital swelling, and congestion of the conjunctiva are also noted.

Alcohol, nitroglycerin, and histamine can induce attacks during the cluster periods.

## Etiology

The etiology of cluster headaches is not known. Because it is predominantly a disease of males, male hormone may have some etiological role. No conclusive data are available, however.



©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Anguish - George Dergalis*

# CLUSTER HEADACHE

## Differential Diagnosis

Chronic paroxysmal hemicrania is a recognized variant of cluster headache that occurs predominantly in women. It is differentiated from cluster headache by short-lived attacks that typically last 5 to 10 minutes, multiple attacks per day (up to 15 to 20 per day), and absolute responsiveness to indomethacin. Cases with a similar clinical picture but with remissions have been recognized and are referred to as episodic paroxysmal hemicrania.



©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Florinal Call - Val Akula*

Cluster headache is distinguished from migraine by the male predominance, strict unilaterality of pain, short-lived attacks (45 minutes to 1 hour), multiple attacks per day, associated autonomic features, restlessness and inability to lie down during the attack, and the periodicity of attacks, including circadian accuracy and clockwise regularity. Migraines tend to occur primarily in females.

# CLUSTER HEADACHE

Symptomatic cluster headaches are cluster headache–like attacks that occur as a result of an underlying intracranial lesion. Parasellar meningiomas, adenomas of the pituitary, calcified lesions in the region of the third ventricle, anterior carotid artery aneurysms, nasopharyngeal carcinomas, ipsilateral large hemispheric arteriovenous malformations, and upper cervical meningiomas have all been reported to produce symptomatic cluster headache.



*Through a Glass Darkly - Janet Morgan Mol*



# CLUSTER HEADACHE

Symptomatic cluster headache should be suspected when the clinical features of the headache are atypical.

Atypical features include:

(1) absence of the typical periodicity seen in episodic cluster headache,

(2) a certain degree of background headache which does not subside between attacks,

(3) inadequate or unsatisfactory response to medications that are effective in idiopathic cluster headache such as oxygen inhalation, ergotamine, and verapamil, and

(4) the presence of neurologic signs other than miosis and ptosis.



©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Suffering without Sin - Christine Shaughnessy*



# CLUSTER HEADACHE

## Diagnostic Workup

With a typical clinical history, there is no need for any specific diagnostic workup. In atypical cases, however, complete neurologic workup is necessary, including MRI and MRA, to exclude the symptomatic variety of cluster headache. EEG has no place in the diagnostic workup of cluster headache.

## Management

**Management of acute attacks:** Acute attacks are of sudden onset and of short duration. Therefore, the use of agents that provide immediate relief is essential. The most effective agents are oxygen inhalation and subcutaneous sumatriptan.



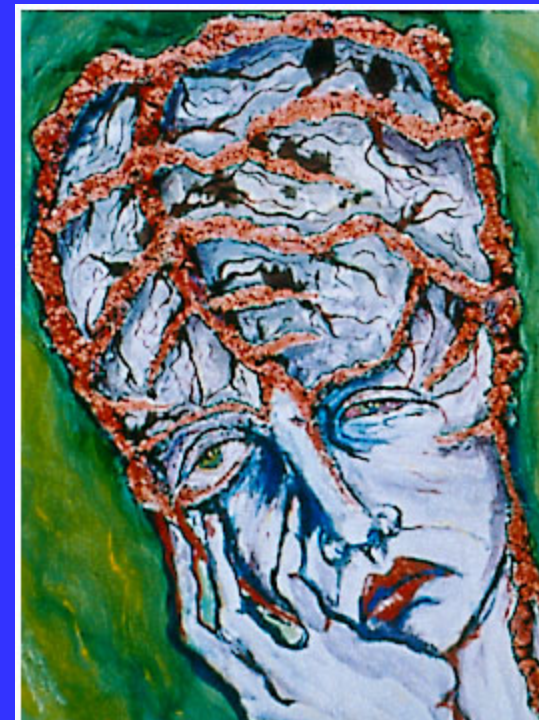
*The Twilight Zone - Heather Dudley*

# CLUSTER HEADACHE

The recommended dose of oxygen inhalation is 7 L per minute for 10 minutes using a facial mask at the onset of headache. Approximately 60% to 70% of patients respond to oxygen, the effect being evident in approximately five minutes, however oxygen may simply delay an attack rather than abort it completely in some patients. The effect of oxygen is purely a result of its cerebral vasoconstrictive property.

With sumatriptan, the headache relief is rapid, commencing within 5 minutes. The recommended dose is 6 mg. Long-term,

repeated use of sumatriptan for acute attacks of cluster headache has been investigated. Sumatriptan is generally well tolerated. The current opinion is that subcutaneous administration of 6 mg of sumatriptan is rapidly effective and well tolerated in the long-term acute treatment of multiple cluster headache attacks.



©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Sick - Karen LeBlanc*

# CLUSTER HEADACHE

Dihydroergotamine, which is available only in the injectable form at the present time, is effective in the relief of acute attacks of cluster headache.

Intravenous injection give rapid relief in less than 10 minutes, whereas intramuscular injection takes longer to be effective. An intranasal preparation of dihydroergotamine is under investigation and, when available, may prove to be a useful agent in the acute treatment of cluster headache.

Ergotamine is available only in tablet or suppository form and thus is not particularly useful in the acute management of cluster headache.

Ergotamine takes a substantial length of time to be effective, and the attack may subside spontaneously before the medicine has had a chance to work. However, some patients who may respond to the suppository form of ergotamine fairly quickly. In general, use of oral or suppository ergotamine is not highly effective in the management of acute attacks of cluster headache because of the delayed action.

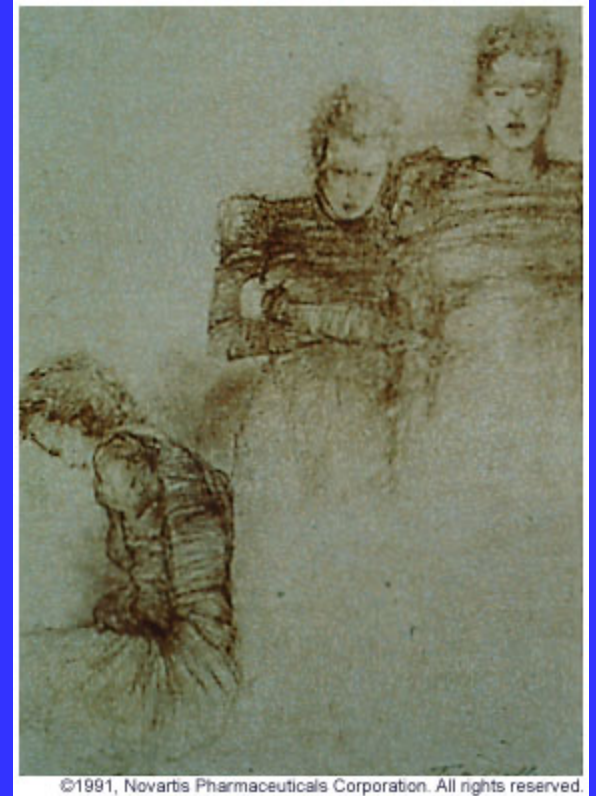


©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Cacophony - Rosemary  
El'Hage*

# CLUSTER HEADACHE

Locally applied lidocaine nasal drops have been reported to be effective in the treatment of acute attacks of cluster headache (Kittelle et al 1985). Patients are told to lie supine with the head tilted backwards toward the floor at 30 degrees and turned to the side of the headache. A nasal dropper may be used and the dose (1 mL of 4% lidocaine) repeated once after 15 minutes. The beneficial effect arises from the local anesthetic action interfering with the nociceptive circuits involving the nasal mucosa and the sphenopalatine ganglion. In turn, this action decreases the afferent activity in the trigeminal system. Many physicians, however, do not find lidocaine to be a very reliable agent.



*Pain and Pain's Release -  
Terri Winding*

©1991, Novartis Pharmaceuticals Corporation. All rights reserved.



# CLUSTER HEADACHE

**Prophylactic pharmacotherapy of cluster headache:** Prophylactic pharmacotherapy is the mainstay of the management of cluster headache. Medications are used daily during the cluster period in the episodic variety and continuously for patients with the chronic variety. The most effective agents include ergotamine, verapamil, lithium carbonate, corticosteroids, methysergide, and valproate. Indomethacin is specific for paroxysmal hemicrania. Beta-adrenergic blocking agents and tricyclic antidepressants are of no particular value.



©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

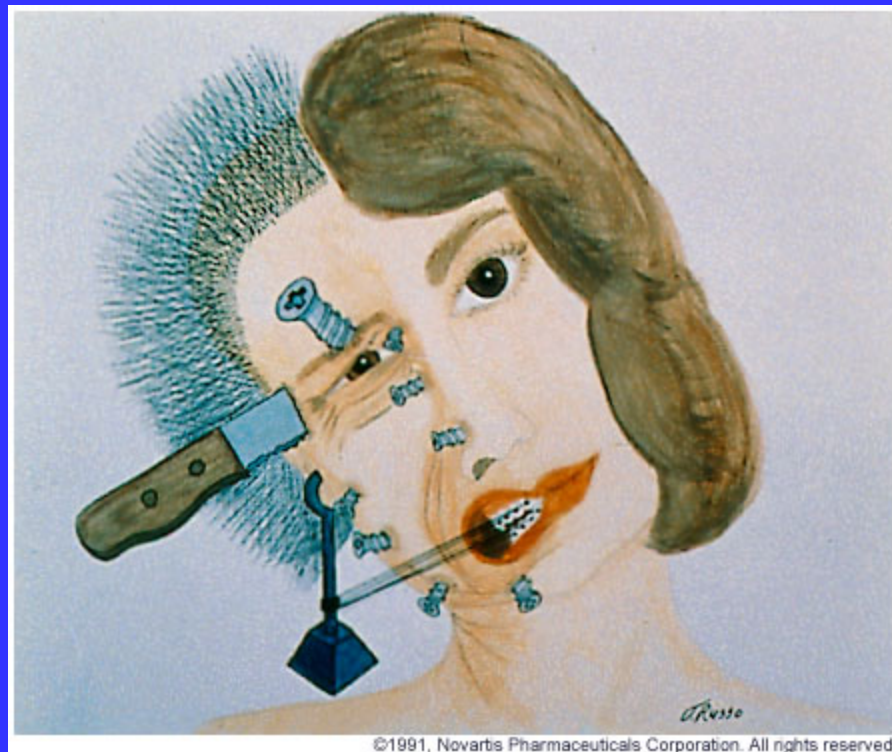
*The Collage Life - Sheila Regan*

The principles of prophylactic pharmacotherapy include: (1) initiation of treatment early in the cluster period, (2) daily use of medications until the patient is free of headache for at least 2 weeks, (3) tapering the medications gradually, rather than abruptly withdrawing them towards the end of the treatment period, and (4) reinstatement of medications at the beginning of the next cluster period.

# CLUSTER HEADACHE

The criteria for selection of a particular medication for prophylactic treatment will depend on (1) the previous response to prophylactic medications, (2) the reactions, adverse or therapeutic, to medications, (3) the presence of contraindications to the use of a particular medications, (4) the type of cluster headache (episodic versus chronic versus chronic paroxysmal hemicrania), (5) the age of the patient, (6) the frequency of attacks,

(7) the timing of attacks (nocturnal versus diurnal), and (8) the expected length of the cluster period. Combinations of two or more medications may be necessary for proper control in some patients.



©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Pernicious Assault - Terri Russo*

# CLUSTER HEADACHE

Ergotamine tartrate (1 mg twice a day) given prophylactically is very useful. There is no evidence that ergotamine causes rebound phenomenon in cluster headache, unlike the case of migraine. Ergotamine is particularly useful in controlling nocturnal attacks when taken at bedtime. Ergotamine is contraindicated in patients with peripheral and cardiovascular disease.

Verapamil (360 to 480 mg per day in divided doses) is the prophylactic drug of choice for both episodic and chronic cluster headache. Constipation and water retention are the most common side-effects. Verapamil can be combined with ergotamine, and this combination is very effective.



*Roger Reacts to the Light -  
Christine Lamb Toubreau*

# CLUSTER HEADACHE

Methysergide is useful as a prophylactic agent especially in younger patients with cluster headache. In older patients with potential atherosclerotic heart disease, this agent should be used with care.

Methysergide has a number of side-effects, including muscle cramps and muscle pains, water retention, and fibrotic reactions (retroperitoneal, pleural, pulmonary and cardiac valvular). Because the duration of periods of episodic cluster headache is approximately 3 to 4 months, use of methysergide is acceptable for that period of time.



*Headache #1 - Rebeckah  
Raye*



# CLUSTER HEADACHE

Lithium carbonate is mainly used for the prophylactic treatment of chronic cluster headache but is also helpful in management of the episodic variety (Mathew 1978; Manzoni et al 1983). The mechanisms of the beneficial action of lithium in cluster headache are not fully understood. Lithium stabilizes and enhances serotonergic neurotransmission within the CNS. The usual dose of lithium is 600 mg to 900 mg per day in divided doses. Lithium levels should be obtained within the first week and periodically thereafter. The serum level required for therapeutic response is usually 0.4 to 0.8 mEq/L, which is less than the standard recommended dose in cases of manic-depressive psychosis.



©1991, Novartis Pharmaceuticals Corporation. All rights reserved.

*Gripping Headache -Raymond Dorow*

# CLUSTER HEADACHE

Corticosteroids, particularly prednisone, are very useful agents in the treatment of episodic cluster headache for short-term use (2 to 3 weeks in tapering doses). This usually helps to break the cycle of headache especially in those who don't respond to medications such as ergotamine and verapamil. Corticosteroids are useful in chronic cluster headache; however, when the medication dosage is tapered, the headache tends to come back.



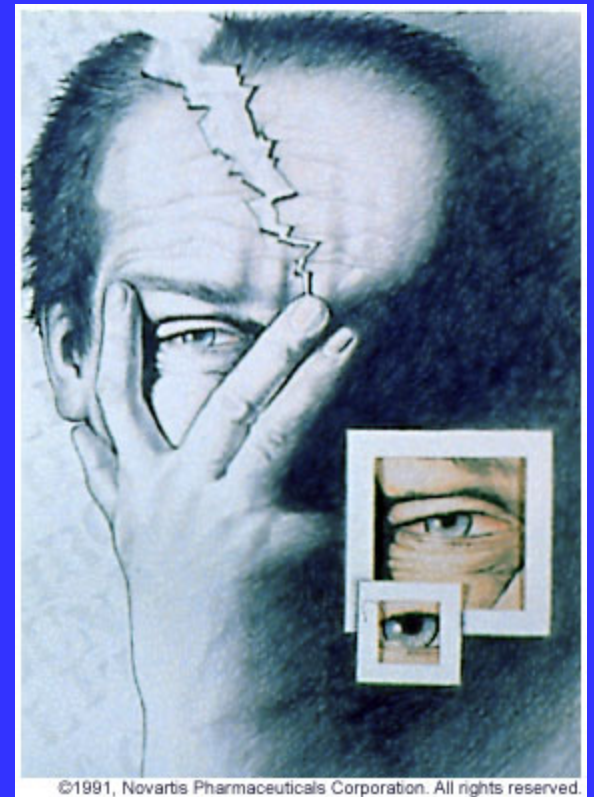
*The Enemy Within - Vona Marengo*

Sodium valproate (600 mg to 2000 mg per day in divided doses) has been reported to be an effective agent in reducing the frequency of cluster headache attacks.

# CLUSTER HEADACHE

Indomethacin is particularly useful in the treatment of paroxysmal hemicrania, both in the chronic and episodic varieties. The responsiveness is absolute and diagnostic (Mathew 1980). Benefit usually appears within 48 hours. Indomethacin is a powerful prostaglandin inhibitor and reduces cerebral blood flow.

**Prioritization of prophylactic therapy:** For episodic cluster headache, verapamil (360 mg to 480 mg per day) is the first choice followed by ergotamine (1 mg twice per day). In more resistant cases a combination of ergotamine and verapamil is recommended. Methysergide (2 mg three to four times a day) is an effective alternative especially in younger patients. Methysergide should not be combined with ergotamine. Corticosteroids may be used for short periods to break the cycle of headache or to treat severe exacerbations.



*The Eyes Have It - Antonia Putman*

**THE END**

**QUESTIONS ???**