Headache

Eric Kraus, MD
This 23 year-old female has headaches behind the right eye that cause her to lay down in a quiet room. They have a throbbing quality and she may vomit.
Migraine Headache

- **Types**
  - Without aura (common)
  - With aura (classic)

- **Epidemiology**
  - 17% women
  - 6% men
  - Onset 5-40yrs

- **4-72 hrs duration**

- **Criteria**
  - At least two
    - Unilateral
    - Throbbing
    - Prohibit activities
    - Aggravate by routine activity
  - At least one
    - N and/or V
    - Photo- and/or sonophobia
Migraine Treatment: Overview

- Non-drug
- Symptomatic
- Prophylactic
Migraine Treatment: Non-drug

- Diary - eliminate triggers
- Discontinue hormonal birth control
- Biofeedback/stress reduction
- Other
  - Acupuncture
  - Massage
  - Chiropractic
  - Smoking cessation
Migraine Treatment: Symptomatic

- **OTC**
  - Naproxen
  - Excedrin migraine*
  - Advil migraine*

- **Ergotamines***
  - Cafergot
  - DHE (nasal, SQ, IV)

- **Triptans***

- **Midrin***

- **Butalbital**
  - ASA (Fiorinal)
  - Tylenol (Fioricet)

- **Compazine/Reglan**

- **Steroids**

- **Toradol**

- **Opiates***

*FDA approved
# Migraine Treatment: Triptans

5-HT1B/D agonists

<table>
<thead>
<tr>
<th>Generic (Brand)</th>
<th>Dose/Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sumatriptan (Imitrex)</td>
<td>6mg/SQ, 50mg/PO, 20mg/NS</td>
</tr>
<tr>
<td>Zolmitriptan (Zomig)</td>
<td>2.5, 5mg/PO and ODT</td>
</tr>
<tr>
<td>Rizatriptan (Maxalt)</td>
<td>5, 10mg/PO and ODT</td>
</tr>
<tr>
<td>Naratriptan (Amerge)</td>
<td>1, 2.5mg/PO</td>
</tr>
<tr>
<td>Almotriptan (Axert)</td>
<td>6.25, 12.5mg/PO</td>
</tr>
<tr>
<td>Frovatriptan (Frova)</td>
<td>2.5mg/PO</td>
</tr>
<tr>
<td>Eletriptan (Relpax)</td>
<td>20, 40mg/PO</td>
</tr>
</tbody>
</table>
Migraine Treatment: Triptans

- Improvement in 60-80% over 1-4 hrs
  - Most have no pain
  - Recurrence 30-50% in next 24 hrs
- SQ > nasal > PO
  - Faster
  - More efficacious
- May repeat dose after 2 hours
- Rizatriptan and Eletriptan may be the best

Subcutaneous Sumatriptan International Study Group. NEJM. 1991;325:316
Migraine Treatment: Prophylactic

- **Level A:** 2+ class I studies
  - Depakote
  - Topiramate
  - Propranolol, metoprolol, timolol
  - Frovatriptan 2.5mg bid (menstrual)
  - Petasites (Butterbur) 75mg bid

- **Level B:** 1 class I, or 2 class II studies
  - Amitriptyline
  - Venlafaxine
  - Atenolol, nadolol
  - NSAIDs (Med overuse worry)
  - Magnesium 300mg qd
  - MIG-99 (feverfew) 100mg qd
  - Riboflavin 400mg qd
  - Subcu histamine

Migraine Treatment: Prophylactic

● **Level C: 1 class II study**
  - Lisinopril
  - Candesartan
  - Clonidine, Guanfacine
  - Carbamazepine
  - Cyproheptadine
  - CoQ10 100mg tid
  - Estrogen

● **Level U: Conflicting data**
  - Acetazolamide
  - Fluoxetine
  - Gabapentin
  - Verapamil
  - Aspirin
  - Indomethacin

● **Other (not reviewed)**
  - Tizanidine (Zanaflex)
  - Zonisamide
  - Botox 100u (>15d HA per month)

Migraine Treatment: Prophylactic

- Start low
- Gradual increase in dose until:
  - Good effect
  - Side effects > benefits
  - Maximal dose
- Don’t give up too quickly!
Summary: Migraine

- Headache diary
- Prophylactic
  - HA freq. > 1/wk.
  - Nortriptyline 10mg-150mg qd.
  - Propranolol LA 60mg-360mg qd.
  - Topiramate 25mg-200mg, divided bid
- Symptomatic
  - Use no more than 2 headaches per week.
  - OTC drugs or triptan.
Rebound Headache

- Daily or almost daily (5+ d/wk)
- Mild to moderate severity
  - Tension-like
  - Intermittent migraine features
- Overused drug works and provides positive feedback to take frequently
- No other cause
- HA improves when drug discontinued
  - 1wk - 2mo washout
This 26 year-old obese female has a constant bilateral headache for two weeks. For three days she has experienced blurry vision and occasional pulsatile tinnitus.
Pseudotumor Cerebri

- Increased venous resistance to CSF absorption
- Young obese women. F:M 8:1
- HA, peripheral vision loss, diplopia (6th), blurring, distortion, pulsatile tinnitus
- Papilledema, visual fields, elevated CSF pressure (nl cells and protein)
- R/O tumor, cerebral venous thrombosis
Pseudotumor Cerebri

- Drug-induced
  - Tetracycline, etc.
  - Isotretinoin (Accutane)
  - Vit A
  - Flonase
  - Nitrofurantoin
  - Danazol
  - Lithium
  - Amiodarone
  - Bactrim
  - Cyclosporin
  - Cimetidine
  - Norplant

- Assoc. disease
  - Cushing dis.
  - Adrenal insuffic.
  - Hypoparathyroid
  - Hypothyroid
  - Pregnancy
  - SLE
Pseudotumor cerebri

- Treatment
  - Weight loss
  - Acetazolamide
  - Repeat LPs
  - Lumboperitoneal shunt
  - Optic nerve sheath fenestration

- Acetazolamide (Diamox)
  - 250mg, 500mg SR
  - Start 250mg bid
  - Increase to 250mg qid or 500mg SR bid after 1 wk
  - Maintenance range 500-1500mg per day
  - Paresthesias, GI

- Other: prednisone, topiramate, furosemide
This 32 year-old male has headaches behind the right eye that are severe with associated right sided ptosis and coryza. He will pace around the room.
Cluster Headache

- Clustering of attacks
- Multiple attacks at same time each day
- Severe pain, constant, N/V, photophobia
- Duration 15 mins. to 3 hrs.
- Ipsilateral autonomic symptoms required
  » Ptosis, miosis, red eye, facial swelling or redness, nasal drainage
Cluster Treatment

● Abortive
  » Oxygen
  » Sumatriptan SQ*
  » Zolmitriptan or Rizatriptan ODT
  » DHE nasal
  » Narcotics

● Prophylactic
  » Prednisone
  » Verapamil
  » Indomethacin
  » Sodium valproate
  » Lithium
  » Topiramate

● Surgical

*FDA approved
Headache Case

This 25 year-old male was bench pressing 200 lbs when he had sudden onset of headache. He has never had a bad headache before. In the ER he is alert.
Subarachnoid Hemorrhage

- Clinical
  - Often “worst HA of life”
  - Sudden onset (usually)
  - Neck rigidity, N/V, photophobia
  - Severity
    - HA only ---> coma

- Etiology
  - Aneurysm rupture at bifurcation of large intracerebral vessels

- Vessels
  - 85% anterior
  - 15% posterior
Subarachnoid Hemorrhage

**Diagnosis**

<table>
<thead>
<tr>
<th>Test</th>
<th>Sensitivity</th>
</tr>
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<tbody>
<tr>
<td>CT</td>
<td></td>
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<tr>
<td>&lt;24 hrs</td>
<td>90-95%</td>
</tr>
<tr>
<td>3 days</td>
<td>80%</td>
</tr>
<tr>
<td>5 days</td>
<td>70%</td>
</tr>
<tr>
<td>1 week</td>
<td>50%</td>
</tr>
<tr>
<td>2 weeks</td>
<td>30%</td>
</tr>
<tr>
<td>Lumbar puncture</td>
<td></td>
</tr>
<tr>
<td>&lt;2 weeks</td>
<td>100%</td>
</tr>
<tr>
<td>3 weeks</td>
<td>70%</td>
</tr>
<tr>
<td>1 month</td>
<td>40%</td>
</tr>
<tr>
<td>Angiography</td>
<td></td>
</tr>
</tbody>
</table>

**Treatment**

- Surgical clips
- Coils
Exertional Headache

- **Clinical**
  - Sudden onset
  - Bilateral throbbing

- **Exercise**
  - Mins. - days

- **Cough, valsalva**
  - Seconds
  - Think Chiari malformation.

- **Sexual (3 types)**
  - Mins. - days

- **Differential**
  - Benign
  - Chiari malformation
  - Subarachnoid bleed
  - Brain tumor

Chiari 1 Anatomy
Exertional Headache: Treatment

● Symptomatic
  » 30 mins. before activity
  » Indomethacin
  » Naproxen
  » Cox-2 inhibitor
  » Ergotamine

● Prophylactic
  » Rarely needed
  » Indomethacin
  » Verapamil
  » Propranolol
  » Acetazolamide (cough)
This 62 year-old male has had a left sided constant headache of moderate severity for two weeks. ROS positive for joint pain and fatigue.
Giant Cell Arteritis

● **Epidemiology**
  » > 50 years, Caucasian
  » F:M 2:1

● **Autoimmune**

● **Clinical**
  » Headache
  » Scalp tenderness
  » Ophthalmologic
  » Jaw claudication
  » Fever, malaise, arthralgias

● **Diagnosis**
  » High ESR 90+% 
  » Mild anemia, high WBC
  » Temporal a. Bx

● **Treatment**
  » Prednisone 40-80mg
  » Methotrexate
    – RCT (+)
Headache Case

This 23 year-old female has a constant (non-throbbing) headache involving the whole head. It has a pressure quality. When the pain is bad, she is light sensitive.
Tension Headache

- Types
  - Episodic
  - Chronic
- <24 hrs in majority
- Cause
  - Stress
  - Sleep disturbance
  - Bruxism
- Is it migraine?

- Criteria
  - At least two
    - Bilateral
    - Pressure, band-like
    - Mild to moderate
    - Not aggravated by routine activity
  - Possible
    - Nausea
    - Photo- and/or sonophobia
Tension Treatment

- Recognition of comorbid illness
- Physical therapy
  - Stress reduction
  - Biofeedback
  - Massage
  - Tens
  - Chiropractic
  - Heat
  - Acupuncture
Tension Treatment

- **Symptomatic**
  - OTC analgesics
  - Fiorinal
  - Narcotics

- **Prophylactic**
  - TCAs
  - Gabapentin
  - SSRIs
  - Tizanidine
  - Trigger point injections
  - Botox
END