Headache Diagnosis and Treatment

Phase 2 student doctors

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Specific Learning Objectives

• Understand why headache is important

• Know how headache is classified

• Know when to think about secondary headache or investigation of headache
  - Red flags.....know what they are & why they are used
  - History taking.....know how to approach it
  - Examination.....know important signs to look for

• Know names & differences of common headaches

• Be aware of the approach to managing headaches
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Why is headache important?

- One of the commonest symptoms clinicians evaluate
  - GP: 4.4 consultations per 100 registered patients
  - Neurology: 25% referrals
  - A+E: 1-2% acute presentations

- One year prevalence of headache disorders is 50%
Why is headache knowledge important?

• **The American Migraine Prevalence and Prevention (AMPP) Study**\(^1\)
  – Surveyed 120,000 households
  – Only 52% of those meeting criteria for migraine had been diagnosed
  – Only 12% of patients were on preventative treatment for migraine

• **Cluster headache**
  – Median time to cluster headache diagnosis in UK is 2.6 years
  – Average of 3 GPs seen before diagnosis\(^2\)

• **Effective treatment depends on correct diagnosis**

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ICHD - 3 beta (2013)

Headache classified as:

- Primary
- Secondary
- Painful cranial neuropathies, other face pains and other headaches
Headache

Primary
  Migraine, Cluster, Tension Type

Secondary
  Meningitis, Subarachnoid Haemorrhage, GCA, Idiopathic Intracranial Hypertension
  Medication Overuse Headache

Other
  Trigeminal neuralgia (facial pain)
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When to think about secondary headache

NICE 2012
Consider further Ix and/or referral if any of:

- **History**
  - > 50
  - Hx of HIV or cancer or trauma or risk factors cerebral ven sinus thrombosis
  - Changing personality or cognitive dysfunction
  - Vomiting without other obvious cause

  Headache:
  - jaw claudication or visual disturbance - ?GCA
  - severe eye pain - ?closed angle glaucoma
  - changing in frequency, characteristics or associated symptoms
  - postural
  - sudden onset headache/thunderclap
  - exercise or valsalva (eg coughing, laughing, straining)
  - focal neurological symptoms (eg limb weakness, unusual aura <5 min or >1 hr)

- **Exam**
  - fever
  - altered conciousness
  - neck stiffness
  - Other abnormal neurological examination
When to think about secondary headache

Always consider immediate referral if.....

- Thunderclap headache ?SAH
- Seizure and new headache
- Suspected meningitis
- Suspected encephalitis
- Red eye ? acute glaucoma

- Headache + new focal neurology
  - including papilloedema

- Management for 3 levels of risk suggested as pragmatic support
  - **Red flags** - risk >1% **urgent investigation**
  - **Orange flags** - risk 0.1-1% **monitor & low threshold investigation**
  - **Yellow flags** - risk <0.1% **management but FU not excluded**
  - **Background** - risk 0.01%

- Symptoms or signs guide level of risk


- **RED**
  - New headache with Hx cancer
  - Cluster headache
  - Seizure
  - Significantly altered consciousness, memory, confusion, coordination
  - Papilloedema
  - Other abnormal neuro exam or symptom (evidence = orange)

- **ORANGE**
  - New headache where diagnostic pattern not emerged after 8 weeks
  - Exacerbated by exercise or valsalva (e.g. coughing, laughing, straining)
  - Headache associated with vomiting
  - Headache for some time but changed significantly, particularly increase frequency
  - New headache if >50y age
  - Headache that wakes the patient from sleep
  - Confusion

- **YELLOW**
  - Diagnosis of migraine or tension type headache
  - Weakness or motor loss
  - Memory loss
  - Personality change

Headache History

History

- Types/number - history for each one
- Time - onset*/duration/how long*/why now/freq and pattern*
- Pain - severity/quality/site & spread/
- Associated - N/V/P/P/Cranial Autonomic Features
- Triggers +/- - triggers/aggravating*/relieving*/FHx
- Response - during attack/function/medication useful
- Between attacks - normal/persisting symptoms
- Any change in attacks
Headache Exam

Exam*

- Fever
- Altered consciousness
- Neck stiffness/Kernigs sign
- Focal neurological signs
  - fundoscopy

*always check blood pressure too
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What common headaches will you see?

**Migraine**

- Episodic migraine with and without aura
- Chronic migraine

**Medication overuse headache (secondary headache)**

**Tension type headache**

Other secondary headaches
Cluster headache
Primary Headaches

Migraine

Cluster

Tension type
Common Headache

Migraine without aura:

A. 5 attacks fulfilling B-D
B. Attacks last 4-72 hours
C. Two of the following:
   1. Unilateral
   2. Pulsing
   3. Moderate/severe
   4. Aggravation by routine physical activity
D. During headache at least one of:
   1. Nausea and/or vomiting
   2. Photophobia and phonophobia
E. Not attributed to another disorder
Aura – Visual-Fortification Spectra
What is the diagnosis?

35 year old lady.......since ~ age 22 about 2-3 times a year she has had....

Severe headache associated with nausea but occasional vomiting. Can occur any time of day and build up gradually and last several hours but once lasted 2 days. The headache is throbbing bilaterally in the temple region right more than left and spreads to back of head.

She has to stop activity and lie down in a dark room.

She occasionally gets a bright lines before the headache which enlarge over 20 min before resolving and the headache follows this.
1\textsuperscript{st} diagnosis

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2nd diagnosis

Typical aura with migraine headache:

A. At least 2 attacks fulfilling B-D

B. Aura consisting of at least one of the following but no motor weakness:
   1. fully reversible visual symptoms including positive features and /or negative features
   2. fully reversible visual symptoms including positive features and /or negative features
   3. fully reversible dysphasic speech disturbance

C. At least 2 of the following:
   1. homonymous visual symptoms and/or unilateral sensory symptoms
   2. at least one aura symptom develops gradually over ≥5 minutes and/or different aura symptoms occur in succession over ≥5 minutes
   3. each symptom lasts ≥5 and ≤60 minutes

D. Headache fulfilling B-D for M w/o A begins during aura or follows within 60 mins.

E. Not attributed to another disorder
Very Common Headache

Infrequent* tension type headache:
*frequent and chronic also exist

A. ≥ 10 attacks occurring <1 day/month (<12 days/year) and fulfilling B-D
B. Headache lasting from 30 minutes to 7 days
C. Headache has two of the following characteristics:
   1. Bilateral
   2. Pressing/tightening (non pulsating) quality
   3. Mild or moderate intensity
   4. Not aggravated by routine physical activity (e.g. walking or climbing stairs)
D. Both of the following:
   1. No nausea or vomiting (anorexia may occur)
   2. No more than one of photophobia and phonophobia
E. Not attributed to another disorder
Unusual Headache

Cluster headache:

A. At least five headache attacks fulfilling criteria B-D

B. Severe or very severe unilateral orbital, supraorbital and/or temporal pain lasting 15-180 minutes if untreated

C. Headache is accompanied by ipsilateral cranial autonomic features and/or a sense of restlessness or agitation

D. Attacks have a frequency from 1 every other day to 8 per day

E. Not attributed to another disorder

Episodic  ≥ 2 cluster periods lasting 7 days to 1 year separated by pain free periods lasting ≥1 month

Chronic  attacks occur for more than 1 year without remission or with remission lasting <1 month.

*mention notes on 50% and exclusion
Unusual Headache

Classical Trigeminal Neuralgia:

A. At least three attacks unilateral facial pain fulfilling B and C

B. Occurring in one or more distributions of the trigeminal nerve, with no radiation beyond the trigeminal distribution

C. Pain has at least three of the following four characteristics:
   1. Reoccuring in paroxysmal attacks from a fraction of a second to 2 minutes
   2. Severe intensity
   3. Electric shock like, shooting, stabbing or sharp
   4. Precipitated by innoculous stimuli to the affected side of the face

D. No clinically evident neurological deficit

E. Not better attributed to another diagnosis
# Differentiating Headaches

<table>
<thead>
<tr>
<th></th>
<th>Migraine</th>
<th>Tension type</th>
<th>Cluster Headache</th>
<th>Trigeminal neuralgia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time</strong></td>
<td><strong>Hours 4-72</strong></td>
<td>Min to days</td>
<td>15-180min</td>
<td>seconds</td>
</tr>
</tbody>
</table>
| **Time**         | Varies         | Varies       | ECH vs CCH       | Bouts
|                  |                |              |                  | Many/day ++++       |
| **Pain**         | Mod/severe     | Mild/mod     | Severe/v severe  | Severe/v severe      |
| **Pain**         | Throbbing      | Pressing/tight| Boring/hot poker| Electric/lightening/stabbing |
| **Pain**         | Uni/bilateral  | Uni/bilateral| Unilateral       | Unilateral           |
| **Triggers**     | ++             | +            | +                | ++++++               |
| **Associated**   | N+/- V         | No           | Maybe N+/- V     | No                   |
| **Associated**   | **Photo /Phono** | Photo or phono | P/P possible    | No                   |
| **Associated**   | CrAF not typical | CrAF -       | CrAF +++         | CrA F not typical    |
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Treatment....Migraine, TTH, Cluster
Migraine principles of treatment

- Lifestyle modification and trigger management
- Accurate diagnosis, manage expectations and close follow up
- Pharmacological treatments
- Psychological and behavioural treatments
- Surgical treatments
NICE: Diagnosis and management of headache

- Clinical guideline, CG150 - Issued: September 2012
- Offers evidence-based advice on the diagnosis and management of tension-type headache, migraine, cluster headache and medication overuse headache in young people (aged 12 years and older) and adults

http://guidance.nice.org.uk/CG150
NICE: Abortive treatment of migraine

- Offer **combination therapy** for acute treatment of migraine with:
  - an oral triptan and an NSAID, or
  - an oral triptan and paracetamol

- For people who prefer only one drug, consider monotherapy with oral triptan, NSAID, aspirin (900 mg) or paracetamol for the acute treatment of migraine

- Consider an anti-emetic in addition to other acute treatment for migraine even in the absence of nausea and vomiting

- Do not offer ergots or opioids for acute treatment of migraine.

http://guidance.nice.org.uk/CG150
NICE: Preventive treatment of migraine

- **Offer topiramate or propranolol**

- If both Topiramate and propranolol are unsuitable or ineffective, consider:
  - a course of up to 10 sessions of acupuncture over 5–8 weeks or
  - gabapentin (up to 1200 mg per day) > now Amitriptyline instead

- For people who are already having treatment with preventive such as amitriptyline, and whose migraine is well controlled, **continue the current treatment as required**

- Advise people with migraine **riboflavin (400mg once a day)** may be effective

- **Botulinum toxin type A** is recommended for the prophylaxis of chronic migraine:
  - if not responded to at least three prior pharmacological prophylaxis therapies and
  - whose condition is appropriately managed for medication overuse

What if treatment doesn’t work?

5 things to consider:

1. Wrong diagnosis
2. Drug not effective for that patient (correct diagnosis)
3. Effective preventive drug but not used long enough
4. None compliance
   - used wrong (e.g. preventive as abortive or wrong time)
   - not tolerated
   - just not taking
5. Medication overuse complicating diagnosis
Secondary Headaches

Subarachnoid Haemorrhage

Giant Cell Arteritis

Meningitis

High intracranial pressure
  • SOL
  • IIH

Medication overuse
24 male student

History
• Non specifically unwell few days
• Headache
  – Gradual onset
  – Generalised
  – Mild photophobia
  – No +/- factors

Exam
• Drowsy
• Pyrexial
• Neck stiffness
• BP normal
• No focal neurology
  -No papilloedema
Meningitis

• Headache with
  – pyraxial
  – photophobia
  – neck stiffness +
  – Kernig’s sign
  – pyrexia
  – rash

• TREAT IF MENINGITIS SUSPECTED

• Bloods, blood cultures, throat swab, blood for serology and PCR, HIV test, CXR, CT head, CSF
30 male teacher

History

• At gym yesterday
• Doing weights
• Headache
  – Sudden onset
  – Generalised
  – Nausea
  – Vomiting

Exam

• Normal
Subarachnoid Haemorrhage

- 8-12 per 100,000/year
- Thunderclap headache
  - maximum severity within seconds
  - “worse ever”
  - SAH until proven otherwise
- Meningeal irritation - may be late or absent
- Focal symptoms and signs
- Coma
  { Severe cases }
SAH - Investigation

• CT 95% sensitive first 24hrs
  – may help in locating source

• LP
  – If CT normal must be done
  – not before 12h to allow xanthochromia

• Angiography
SAH - Cerebral Angiography

Anterior cerebral artery
Middle cerebral artery
Internal carotid artery
aneurysm
SAH - Management

• Resuscitation

• Nimodipine

• Early intervention to prevent re-bleeding
  – Radiologically
  – Surgically

• Monitor for complications
60 female retired teacher

History
• Headache
  – Gradual for one month
  – Worse first thing in the morning
  – Eases as day goes on
  – Worse coughing/straining
  – Nauseated in past week

Exam
• Normal
Raised Intracranial Pressure

- Worse on waking
- Worse coughing, sneezing, straining
- Postural, worse lying down
- Nausea, vomiting

- Papilloedema - may be absent if acute
- +/- focal signs
Papilloedema

Early Acute

Severe Acute
MRI - space occupying lesion
30 female accountant

**History**
- Headache
  - 2 months
  - Intermittent
  - Generalised
  - Worse lying down
- Visual obscurations

**Exam**
- High BMI
- Papilloedema
Idiopathic Intracranial Hypertension

• Not “benign”
• Headache of raised ICP
• Visual disturbance
  – acuity, fields

• Papilloedema
Idiopathic Intracranial Hypertension

• Risk factors
  – Obesity
  – Drugs e.g. Tetracycline

• Normal CT +/- contrast

• CSF opening pressure high but normal constituents

• Imaging to exclude secondary cause and cerebral venous sinus thrombosis
CT and CT venogram

MRI and MR venogram
Goldman Visual Fields
IIH - Management

- Modify - risk factors
- Monitor - visual fields (Goldman fields)
- Drugs - Acetazolamide/Topiramate/Diuretics
- Repeated LP’s
- CSF shunt
- Optic nerve sheath fenestration
70 male retired politician

History
• Feeling generally unwell, weight loss
• Headache
  – New
  – 3 months
  – Gradual onset

Exam
• Normal
Giant Cell Arteritis

3 of these 5 criteria present:

- Age > 50
- New headache or new type of localised pain.
- Temporal artery abnormality:
  - tenderness
  - decreased pulsation
- ESR elevated > 50
- Biopsy abnormal
Giant Cell Arteritis

- Consider in all **over 50 years** with headache
- Associated with PMR
- **Jaw claudication**
- Visual symptoms
- Tender temporal arteries
- Check ESR/CRP
- Start high dose steroid if suspected
- Refer for temporal artery biopsy
Chronic Daily Headache
# Chronic Daily Headache

This is only a DESCRIPTIVE TERM for headache on ≥ 15 days per month

.........a broad differential diagnosis exists

## Primary Headache*

- **Chronic Migraine**
- Chronic Tension-type headache
- Chronic cluster headache
- Chronic paroxysmal hemicranias
- Hemicrania continua
- New daily persistent headache

## Secondary Headache*

- **Medication overuse headache**
- Chronic post-traumatic headache
- Raised intracranial pressure
- Low CSF pressure headache
- Chronic meningitis

*common causes, not all causes
Medication overuse headache

A. Headache present on $\geq 15$ days / month

B. Regular use for $>3$ months of one or more symptomatic treatment drugs as defined under subforms of 8.2

1. Ergotamine, Triptans, Opioids or Combination analgesic medications on $\geq 10$ days / month for $>3$ months

2. Simple analgesics or any combination of ergotamine, triptans, analgesic opioids on $\geq 15$ days / month for $>3$ months on a regular basis for $>3$ months without overuse of any single class alone

C. Headache has developed or markedly worsened during drug use
Over the counter medications?

I've got a terrible migraine.

Try this. It's for ice cream headaches, but it's the strongest thing I've got.
Codeine…

• ..is **NOT a long term** treatment option for headache
• WHO analgesic ladder should **NOT** be applied to headache management
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A final thought: listening is therapy in itself

thanks, any questions?