Headache

- All primary headaches can be classed as either:
- EPISODIC = Occurs < 50% of days.
OR
- CHRONIC = Occurs > 50% of days i.e. > 15/7 per month for at least 3/12.

↑
↓
≥
≤
∴
±
↔
≈

Disclaimer:
Read the disclaimer at medimaps.co.uk/disclaimer

References:
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2. London strategic clinical networks
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4. Sandwell and West Birmingham headache clinic
5. Neurology lecture Alliance Federation Feb 2017
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8. British menopause society, Migraine and HRT, Oct 2017
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10. David Kernick GPSI PULSE conference Sept 2020
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13. Maternal health and medication Black Country webinar autumn 2024.

Rule out sinister causes
(more likely if < 6/12 duration)

Red flags

- <6/12 duration.
- Following head trauma if progressive.
- Thunderclap.
- New altered headache.
- Tender temporal artery (GCA)
- Jaw claudication (GCA).
- New onset with blackout.
- Unexplained and progressingly severe.
- Nausea, lethargy and poor concentration (CO poisoning).
- Headache with atypical aura (duration >1 hour, or including significant / prolonged motor weakness)
- Associated with postural change (bending) or coughing (possible raised ICP)
- New onset if Hx Ca.
- Unilateral red eye, fixed pupil (angle closure glaucoma).
- Rapid progression of sub-acute focal neurological deficit*
- Rapid progression of unexplained cognitive impairment / behavioural disturbance*
- Rapid progression of personality changes confirmed by witness where there is no reasonable explanation*
- New onset headache in a patient with a history of HIV / immunosuppression*
- New onset headache in a patient older than 50 years *
- Wake from sleep*
- Progressive headache, worsening over weeks or longer*

- Consider admission, urgent MRI scan (marked *) or
2ww referral as appropriate.
- 50% of MRI scans are abnormal, so you just increase anxiety.
- Most brain tumours do not present with headaches. They present with neurological deficit or seizure. That's why as a neurologist a seizure makes them worry, but a headache doesn't.

Investigations

- I cant think of a single case in the past 20 years, or for my colleagues where the examination changed the management plan.
- Headache diagnosis is all in the Hx.
- Dr David Kernick (GPSI)

- BP.
- Palpate temporals.
- Fundoscopy.
- Neurological examination.
- Neck and shoulder tenderness.
- Headache diary for 3-4/52.
- Food diary.

Neurological examination:
- Hemiparesis
- Incoordination
- Dysphasia
- Visual field
- Gait abnormality

Food diary:
- Citrus.
- Gluten.
- Chcolate.
- Cheese.
- Fizzy drinks.
- Tomatoes.
- Onions.

- The major types are listed below.
- However, it is important to realise they may have more than one type.
- So can develop tension type headaches on underlying migraine, or medication overuse with tension type headaches.

95 % are either

Trigeminal autonomic cephalalgias

- Strictly unilateral headaches.
- Excruciating.
- Occurs in association with ipsilateral cranial autonomic features.

Cluster headache

A. At least five attacks fulfilling criteria B-D

B. Severe or very severe unilateral orbital, supraorbital and/or temporal pain lasting 15-180 min (when untreated)

C. Either or both of the following:

1. at least one of the following symptoms or signs, ipsilateral to the headache:
a) conjunctival injection and/or lacrimation
b) nasal congestion and/or rhinorrhoea
c) eyelid oedema
d) forehead and facial sweating
e) forehead and facial flushing
f) sensation of fullness in the ear
g) miosis and/or ptosis

2. a sense of restlessness or agitation

D. Attacks have a frequency between one every other day and 8 per day for more than half of the time when the disorder is active

- Refer urgently to headache specialist clinic.
- Excruciating pain can drive patient to suicide.
- Consider indomethacin trial.
- Issue fast acting triptan.
- Consider steroid.
- Do NOT use beta blocker.
- MRI head to exclude 2o cause.

Indomethacin trial:
- Indomethacin 25mg TDS for 3/7
IF FAILS
- Indomethacin 50mg TDS for 10/7
IF FAILS
- Indomethacin 75mg TDS for 10/7

Fast acting triptan:
- Sumatriptan 6mg S/C, max BD for the duration of the cluster bout.
OR
- Zomig 5mg nasal (is in blood in 2min and brain in 5min).

Steroid:
- Prednisolone.
- 1mg/kg, max 60mg OD, for 2-3 weeks.
- ↓ by 10mg every 3/7.
OR
- Dexamethasone.
- 12mg OD.
- ↓ by 4mg every 3/7.

2o care may start following

- Most sources suggest verapamil as first line prophylaxis.
- Verapamil 40-80mg TDS starting dose then ↑ dose as prednisolone withdrawn.
- Prednisolone should be started at the same time as verapamil at a dose of 60-100mg daily for 5/7, then decrease by 10mg every 3/7, so that treatment is discontinued after 2-3/52.

Short-lasting unilateral neuralgiform headache attacks

A. At least 20 attacks fulfilling criteria B D

B. Moderate or severe unilateral head pain, with orbital, supraorbital, temporal and/or other trigeminal distribution, lasting for 1 600 sec and occurring as single stabs, series of stabs or in a saw-tooth pattern

C. At least one of the following cranial autonomic symptoms or signs, ipsilateral to the pain:

1. conjunctival injection and/or lacrimation
2. nasal congestion and/or rhinorrhoea
3. eyelid oedema
4. forehead and facial sweating
5. forehead and facial flushing
6. sensation of fullness in the ear
7. miosis and/or ptosis

D. Attacks have a frequency of at least one a day for more than half of the time when the disorder is active

Short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing (SUNCT)

- Additional conjunctival injection AND lacrimation (tearing).

- Refer to headache clinic.
- They may use lamotrigine etc.

Short lasting unilateral neuralgiform headache attacks with cranial autonomic symptoms (SUNA)

- Only one or neither of conjunctival injection and lacrimation (tearing).

Paroxysmal hemicrania

While the majority of attacks are spontaneous, approximately 10% of attacks may be precipitated mechanically, either by bending or by rotating the head.

Attacks may also be provoked by external pressure against the transverse processes of C4-5, C2 root, or the greater occipital nerve. Alcohol ingestion triggers headaches in only 7% of patients.

A. At least 20 attacks fulfilling criteria B-E

B. Severe unilateral orbital, supraorbital and/or temporal pain lasting 2-30 min

C. At least one of the following symptoms or signs, ipsilateral to the pain:

1. conjunctival injection and/or lacrimation
2. nasal congestion and/or rhinorrhoea
3. eyelid oedema
4. forehead and facial sweating
5. forehead and facial flushing
6. sensation of fullness in the ear
7. miosis and/or ptosis

D. Attacks have a frequency above five per day for more than half of the time

E. Attacks are prevented absolutely by therapeutic doses of indomethacin

- MRI head.

- Indomethacin 25mg TDS for 3/7
IF FAILS
- Indomethacin 50mg TDS for 10/7
IF FAILS
- Indomethacin 75mg TDS for 10/7

maintenance dose

- Treatment is entirely preventive, as attacks are too short and intense for any acute oral treatment to be effective.
- Usually indomethacin 25mg-100mg OD.
- Sometimes 12.5mg-300mg OD.
- Consider GI protection

Primary stabbing headache

A. Head pain occurring spontaneously as a single stab or series of stabs and fulfilling criteria B-D

B. Each stab lasts for up to a few seconds

C. Stabs recur with irregular frequency, from one to many per day

D. No cranial autonomic symptoms

E. Not better accounted for by another ICHD-3 diagnosis.

- When stabs are strictly localized to one area, structural changes at this site and in the distribution of the affected cranial nerve must be excluded.

- Nil treatment needed.
- Just reassurance that nil sinister.
- Can try medication.

Migraine

85 %

- Most people who attend their GP with recurrent / chronic headaches have migraine.
- A recurrent severe headache associated with nausea and photophobia is 98% predictive of migraine.

- Diagnostic criteria - at least 5 attacks fulfilling criteria 1-4
- 1) Lasts 3hrs - days if untreated
- 2) At least 2 of the following:
- Unilateral location
- Pulsating quality
- Moderate/severe pain
- 3) Nausea / vomiting and/or photophobia
- 4) No other cause identified

Other features:
- Pounding.
- Worse with moving.
- Phonophobia.
- Intolerance of smell.
- Wish to sleep it off.

Unilateral location:
- Too much emphasis is put on it being unilateral.

can have aura

- Occurs in 1/3 of migraine sufferers.
- Aura 5-60 minutes prior to headache.
- Usually visual, and spreads across visual field over minutes. Loss, blurring and additional features e.g. dots, zigzag etc.
- Tingling down body over minutes, some times one side.
- Speech arrest (can't get words out).

be aware

- Chronic migraine with or without aura occurring everyday needs specialist review.

lifestyle

- 3L fluid / day.
- Eat three meals a day regularly i.e. never miss or delay.
- No caffeine.
- Sleep 7-8 hr uninterupted.

commenest triggers

- Stress.
- Hormones (female).
- Not eating.
- Weather.
- Sleep disturbance.
- Perfume/odour.
- Neck pains.
- Lights.
- Alcohol.
- Smoking.
- Heat.
- Food.
- Exercise.

acute treatment

Triple cocktail

- To be taken at onset of headache .
- Alternatively take the prokinetic and analgesia at aura, and only take the triptan at onset of headache.
- Should not be used for more than 6x per month.

- Prokinetic (metoclopramide OR domperidone).
- Analgesia.
- Sumatriptan.

Prokinetic:
- Consider rectal anti-emetic suppositories (domperidone) if N&V.

Analgesia:
- Consider rectal analgesic (e.g. diclofenac).
- ibuprofen 400- 600mg STAT
OR
- naproxen 500-750mg STAT
OR
- aspirin 900mg STAT

- Never use opioids. Dependency soon develops.

Sumatriptan:
- If fails to stop the attack within 2-4hr, in 4 out of 6 attacks, switch to alternative triptan because NOT class failure. All triptans have a slightly different array of receptor affinity as do our individual brains.
- Try to avoid using more than 1-2 x per week OR 6x a month.

prophylaxis treatment if about two attacks per month
OR
if aura lasts for weeks even with one attack

- Aim is to reduce attacks by 50% from baseline.
- Can take 6-8/52 before beneficial effects noticed.

- metoprolol
OR
- propranolol
OR
- amitriptyline
OR
- topiramate

- Start low dose, and slowly titrate up about every 2/52 to max tolerated dose.
- Once stable for 6/12, can slowly withdrawal.
- Keep headache diary to identify lifestyle factors which need modifying.

- Amitriptyline is useful with co-existent tension type headache, disturbed sleep or depression.

- Only use nortriptyline if amitriptyline was effective but unable to tolerate s/e.
- Melatonin 10mg at night is equivalent to amitriptyline 10mg. So its to do with getting to sleep at night,

if fails

- Refer to headache clinic.
- May be eligible for botox.
- But why does botox work?
- To do with muscle relaxation.
- So can try massages first !

IF FAILS

- Refer to headache clinic rather than a general neurologist who is unlikely to be helpful.

Medications

Amitriptyline
- Start 10mg ON.
- Titrate up to 10mg every 2/52.
- Maximum 150mg ON.

Bisoprolol
- Start 5mg OD.
- Titrate up by 10mg after 2/52.
- Maximum 100mg OD.

Domperidone
- Start 10-20mg STAT.
- Then 10mg 8 hourly.

Metoclopramide
- Start 10mg STAT.
- Then 10mg 8 hourly.
- Maximum 30mg in 24 hr.

Metoprolol
- Start 50mg OD.
- Titrate up by 50mg every 2/52.
- Maximum 100mg BD.

Mirtazapine
- Start 15mg ON.
- Titrate up by 15mg every 2/52.
- Maximum 45mg ON.

Nortryptyline
- Start 10mg ON.
- Titrate up to 25mg after 2/52.
- Then titrate up by 25mg every 2/52.
- Maximum 150mg ON.

Pizotifen
- Start 500mcg ON.
- Titrate up by 500mcg every 2/52.
- Maximum 3mg ON.

Pregabalin
- Start 75mg BD (morning and evening) for 14/7.
- Then 150mg BD.

- Continue for 3-4/12 to evaluate effectiveness.

- If needed increase to 225mg BD for 14/7.
- Then 300mg BD.

S/E:
- Dizziness, sedation, ↑ appetite.

Propranolol
- Start 20mg OD.
- Titrate up every 2/52.
- Maximum 320mg OD.

Propranolol LA
- Start 80mg OD.
- Titrate up by 80mg every 2/52.
- Maximum 160mg BD.

Triptans

- Do not bother using if 30 min later than onset of headache as you have missed the boat.

- All slightly different so use alternative if one doesnt work or s/e.
- Frovatriptan works long term.
- Explain triptan sensations are common and do not need to stop.
- Do not use in CVD as vasoconstrictive.

Sumatriptan
- Dose 50-100mg STAT.
- Repeat after 2hr if needed.
- Max 300mg in 24 hr.

Rizatriptan
- Dose 10mg STAT.
- Repeat after 2hr if needed.

Frovatriptan
- Dose 2.5mg STAT.
- Repeat after 4hr if needed.

Naratriptan
- Dose 2.5mg STAT.
- Repeat after 4hr if needed.

Zolmitriptan
- Dose 2.5-5mg STAT.
- Repeat after 2 hr if needed.

Almotriptan
- Dose 12.5mg STAT.
- Repeat after 2hr if needed.

Eletriptan
- Dose 40mg STAT.
- Repeat after 2hr if needed.
- Alternatively 80mg STAT.
- Max 80mg in 24 hr.

Children:
- Paeds consultant uses sumatriptan in >7y, but is off label.

Pregnancy:
- Can be used based on real life data.

C/I:
- These are vasoconstrictors so do not use in CVD, CAD, PVD, uncontrolled HTN.
- In hemiplegic migraine, its contraindicated to use a triptan. As can make worse.

Topiramate
- Start 25mg OD (in evening) for 2/52
- Titrate up by 25mg every 2/52 until 100mg OD.

- Continue for 3-4/12 to evaluate effectiveness.

- If needed increase to 25mg morning and 100mg evening for 1/52.
- Then 50mg morning and 100mg evening for 1/52.
- Then 75mg morning and 100mg evening for 2/52.
- Then 100mg BD.

- Do not use in pregnancy. Use contraception.
- Do not use if depressed.
- Drink plenty of water e.g. 2L per day.

S/E: Lethargy, paraesthesia, dizziness.

Tension

10 %

- This is rare. Mostly it's chronic migraine which is misdiagnosed as tension headache.

- It's due to release of neurotransmitters.
- The stress just sets it off.

- Mildly nauseated.
- Tight band like.
- Not disabling.
- Mild disturbance of sensorium.
- Usually episodic.
- Deemed chronic if >15days per month.
- Stress is common trigger but not always obvious.
- Can occur in combination with other types of headaches especially migraine and cervicogenic / neck problems.

- Simple analgesia (avoid opioids).
- Amitryptyline.
- Acupuncture.
- Physiotherapy if neck complaints.
- Neutriceuticals.

Neutriceuticals:
- Feverfew.
- Butterbur.
- Coenzyme Q10 300-600mg.
- Magnesium 600mg.

Medication overuse headache

- Is the diagnosis in 50% of some headache clinics.
- The dose doesnt matter, its the number of days a week that counts.
- Occurs if use:
- Simple analgesia > 15 days per month.
OR
- Opiods or triptans > 10 days per month.

- Only treatment is withdrawal.
- Education & communication is critical.
- Stop all analgesia for 8/52 weeks.
- Use manual methods to help with pain, ice packs, antiemetic, slight beta blocker, maybe amitriptyline for sleep,
- Sometimes regular naproxen may be used in the early stages of withdrawal.

Pregnancy migraine

- Can occur for first time in pregnancy.
- 1st trimester often bad, then settles.
- 2/3 improve by 3rd trimester.
- Post partum exacerbation common up to 1/52 after delivery.

- If woman develops aura for first time in pregnancy consider:
- Imminent eclampsia.
- Cerebral venous sinus thrombosis.
- Thrombocytopenia.

- May be migraine but needs admission for further investigation.

Acute — first line → - Paractamol. — second line → - Aspirin
OR
- Ibuprofen max 600mg

- Can take these up to 30/40.

if fails →

Triptans:
- Safety in pregnancy yet to be confirmed
- Women who have used triptans in early pregnancy can be reassured, exposure has not been associated with adverse outcomes
- Triptan use during pregnancy is only recommended if no other treatment is effective
- Sumatriptan has reassuring clinic data.
- Sumatriptan safety data base: 4.3% risk first trimester birth defects.
- Compared to 3 to 5% risk in general population i.e. same risk.
- Can also use zolmitriptan.

Antiemetic →
- Cycline
OR
- Promethazine
OR
- Metoclopramide

Prophylaxis → - Avoid preventatives were possible in pregnancy.

STOP teratogenic medication being used for migraine:
- Candesartan.
- Topiramate.
- Sodium valproate.

But all of them can be used when breastfeeding.

1st line

- Propranolol

- Use lowest effective dose (e.g. 10-40mg TDS).
- Possible increased congenital heart defects.
- Intrauterine growth retardation.
- Low birth wt.
- But these may due to underlying maternal condition.
- Can cause neonatal bradycardia, hypoglycaemia, hypotension, respiratory distress.
- Data on stopping 24-48H before delivery conflicting.

2nd line

Amitriptyline 10-25mg

- Aim to stop 3-4 weeks before delivery.
- Can cause tachycardia, irritability, muscle spasm and convulsion.

Breast feeding and migraine

- Paracetamol safe.
- Avoid aspirin = risk of Reyes syndrome.
- NSAID = concentration in breast milk very low.
- Anti-emetics =domperidone is a pro-kinetic, stimulates prolactin, does not cross blood brain barrier, concentration in breast milk are low.
- Sumatriptan = limited data available, avoid breast feeding 12-24 hts after treatment. Low level of excretion in breast milk (0.5% of oral dose).

Menstrual migraine

- Naproxen 500mg BD 2-4 days before onset of menses, and 3-5 days after.
AND/OR
- Triptan 2-4 days before onset of menses, and 3-5 days after
(fovariptan 2.5mg BD / zolmitriptan 2.5mg TDS / naratriptan 1mg BD)

- COC pill (not if aura) back to back for 3 packs then 4-7/7 break.
OR
- Progesterone depot.
OR
- Progesterone implant (Implanon).
OR
- Desogesterol pill.

if migraine occurs during the COC pill free interval

- Change to different progesterone in pill.
OR
- Oestrogen patch 100mcg started 3/7 before onset of menses and continued for 7/7
OR
- Estradiol gel 1.5mg started 3/7 before onset of menses and continued for 7/7

Menopause

- Perimenopausal women with no Hx of migraine aura may benefit from COC until age 50.
- Migraine aura does not contraindicate HRT.
- Use topical oestrogen.
- Use the lowest oestrogen dose that effectively controls vasomotor symptoms.
- Where progestogen is required continuous delivery is recommended:
  levonorgestrel intrauterine system
  transdermal norethisterone (as in combined patches)
  micronised progesterone
- Women with migraine and vasomotor symptoms who do not wish to use HRT or in whom oestrogens are contraindicated may benefit from escitalopram or venlafaxine

Idiopathic intracranial hypertension (IIH)

- Unknown cause.
- 50% have PMH migraine.
- Child bearing age females (very rarely males).
- Overweight or rapid ↑ in past yr.
- OSA in 30%. Makes papilloedema and headache worse.

- Headache (90%). Episodic, then more frequent, until can become a background daily pain with superimposed spikes of more severe break through pain. Text books are wrong, they are not better on standing i.e. gravity pulling down CSF and ↓ pressure is not a thing...except in extreme end of spectrum. They are migraine like headaches in 65-85%, hence, can feel mor ecomfortable laying down just like other migraines.
- 'Blackouts' or grey outs (60%) in one or both eyes (rarely both eyes simultaneously), lasting few sec then become more prolonged with worsening pressure, due to pressure on optic nerve.
- Neck pain.
- Dizziness.
- Back pain.
- Cognitive fog.
- Pulsatile tinnitus.

six criteria to diagnose

- Bilateral papilloedema (get optician to check).
- Normal neurological examination (except rarely CN VI palsy).
- BMI ≥ 30 (rare if less, unless rapid wt gain e.g. BMI 16 but rapidly increased to 24).
- Normal brain imaging apart from IIH features.
- Venography to rule out Venous sinus thrombosis.
- Lumbar puncture for ↑ opening pressure and sent to lab.

CN VI palsy:
- Not able to move eye out so frank doubling of vision, particularly at distance rather than looking at close up things like a book.

- OSA screening (35% have it).
- FBC and Ferritin (10%).

- Treating iron deficiency anaemia can really help some patients ymptoms.

- Key for all pt's is to lose body wt as puts disease into remission. Think if GLP-1 can be prescribed.
- Wt loss is the most important treatment.
- Note: no issues with using contraception.

- Medical management (for 93% pt's).

- Specialist clinic only start headache preventative medication once pressure ↓ and eyes stabalised.
- If you start meds and they have high pressure it will not work well.
- Once treated the pressure and in the Persistent Post IIH Headache phase, can start paracetamol, triptans and antiemtics for acute pain. And prophylactics if frequent attacks. Avoid beta blockers, TCA and pizotifen as can ↑ wt.

- Limited literature evidence for medications apart from acetazolamide.
- Acetazolamide. Low dose 250mg OD or BD is likely not beneficial in trying to ↓ pressure. In B'ham clinic they use 1g BD. Only use short time and then come off it.
- Topiramate can ↓ pressure, anti-migraine effect and can ↓ wt.
- Furosemide (but NOT bumetanide). In combination with acetazolamide may work better to ↓ pressure.
- GLP-1 to ↓ wt, but also may ↓ pressure too.

- Surgical management (7% pt's need)

- If concerns about vision.

Children

Refractive errors

- In children refractive errors are a common cause of headaches

- Uncommon before 5yr.
- Take seriously.
- Refer, even if strong FHx of migraines.
- Refer to paeds if migraine lasts > 72 hrs.
- Paeds will usually investigate.
- 0.3% of childhood headache due to brain tumour.

- Excess screen time can cause headaches
- As can dehydration and poor sleep hygience.
- School performance or behavioural change think 2o cause.

- Look for skin neurocutaneous lesions.

- Migraine without aura is more common in paeds.
- Migraine variants are precursors of migraine. Cyclic vomiting, benign paroxysmal torticollis. Consider referring these to paeds.

- Only 50% sufferers can identify trigger.
- 60% cant describe pain.

- Can ask them to draw any visual symtoms while they have migraine.
- Occipital epilepsy will be more visual disturbance and many colours.
- Migraine is black and white.

- Paeds consultant uses Paramax with good effect.
- Triptan = Do not use > 3 days/wk.
- High dose of topiramate can cause intelectual depression so not good for exams. So he uses lower dose i.e. <100mg / day.
- Prophylaxis for 9-12/12, then wean off. can restart if returns..
- migraine4kids.org has midfulness advice.

Trigeminal neuralgia

- Consider facial pain trigeminal neuralgia as a cause of headache
- All trigeminal neuralgia should have MRI to exclude MS and other compresive tumours.

Cervicogenic

Posterior headaches often relate to cervicogenic headaches

Medication

Consider medication esp combined oral contraceptive pill (OCP).

Hypnic headache

A. Recurrent headache attacks fulfilling criteria B-E

B. Developing only during sleep, and causing wakening

C. Occurring on ≥10 days per month for >3 months

D. Lasting ≥15 min and for up to 4 hr after waking

E. No cranial autonomic symptoms or restlessness

Exercise/sex headache

- 10% will have underling pathology.

- Image all of them.

Brain tumour

0.09% who present to GP

- Headache at some point = 70%
- Headache at presentation = 50%
- Headache alone = 10%