Adult Headache Pathway

NHS
Nottinghamshire Area Prescribing Committee

- Do you have a headache all the time or does it come & go? (Tension Type Headache or Medicines Overuse Headache usually have pain all the time)
- If intermittent, what do you do when you have the pain? (patients with migraine want to lie/sit still when pain is bad, those with cluster headaches can't sit still when having an attack)
- What tablets are you taking now and have you taken before?

Patient presents with headache

Take history & examine including BP, temporal arteries (if age > 50years) & fundoscopy

Red Flags - Headache that is new or unexpected in an individual patient
- Thunderclap headache (intense headache of "explosive" onset suggest SAH)
- Jaw claudication (suggests temporal arteritis - take ESR /CRP & start steroids immediately)
- Headache with atypical aura (duration >1 hour, or including significant / prolonged motor weakness)
- Headache associated with postural change (bending) or coughing (possible raised ICP)
- New onset headache in patient with history of cancer, especially if < 20 years
- Unilateral red eye – consider angle closure glaucoma
- Remember carbon monoxide poisoning (also causes lethargy + nausea)
- 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
- Headache causing patients to wake from sleep
- Progressive headache, worsening over weeks or longer

Consider admission, urgent MRI scan or 2ww referral as appropriate

Exclude red flags

Secondary headache - non serious cause

Posterior headaches often relate to cervicogenic headaches

Unlikely to be sinuses, TMJ dysfunction or teeth unless other signs /symptoms indicative of this

Consider medication – esp combined hormonal contraception (CHC). If patient has migraines with aura then CHC is contraindicated

Consider facial pain trigeminal neuralgia as a cause of 'headache'

Primary headache

The major types are listed below – it is important to realise however that patients may have more than one type, so can develop tension type headaches on underlying migraine, or medication overuse with tension type headaches
NICE recommends keeping a headache diary

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

Migraine without aura

Diagnostic criteria - at least 5 attacks fulfilling criteria 1-4
1) Lasts 4-72 hours 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

Chronic migraine with or without aura occurring everyday needs specialist review

Migraine with aura

Occurs in 1/3 of migraine sufferers
Aura 5-60 minutes prior to headache
Usually visual – note blurring & spots not diagnostic

Chronic migraine with or without aura occurring everyday needs specialist review

Tension type headache (TTH)

Usually episodic
Deemed chronic if >15days per month
Stress is common trigger but not always obvious

Can occur in combination with migraine and secondary headache triggers especially cervicogenic /neck problems

Medication Overuse Headache (MOH)

M:F (1:5 ratio)
Medication history is crucial especially use of over the counter analgesia. Can occur with other headache types
Prophylaxis medication doesn't help & can worsen
Medication overuse headache improves within 3 months of analgesic cessation.

Cluster headache

Affects M:F (3:1 ratio)
Usually aged 20+ years
Bouts last 6-12 weeks
Usually occurs 1-2 x a year, often at same time of year.
Rarely chronic throughout year
Very severe – often at night & lasts 30-60 minutes
Strictly unilateral
Ipsilateral conjunctival injection, rhinorrhoea +/- Ptosis confirm

Migraine with / without aura

Step 1- For acute attacks simple analgesic & triptan – evidence suggest combination maybe best
- consider adding anti-emetic
- avoid opioids

Triptans – may need to try more than one type.
Care needed - however as frequent use can lead to triptan overuse headaches (a form of MOH). Aim to use <2 doses/week *(see notes)*
Use most cost-effective first
Also note migraines often return 48-72 hours post use of a triptan

Step 2 - consider rectal analgesic (diclofenac) but be aware of MHRA guidance

If headaches are frequent &/or acute medication is used very frequently, prophylaxis should be considered. This should be titrated until control is gained and may take 6-8 weeks before beneficial effects are seen. Usually needs to be continued for at least 6 months before considering a trial without

Prophylaxis - 1st line
β-blockers-propanolol 80-240mg in divided doses
Or
Topiramate* - 25mg od to max 50mg bd (now recommended by NICE)
***Please see additional notes for license comments. Note topiramate is an enzyme inducer so care is needed with combined OCP/POP. Can cause foetal abnormalities - contra-indicated in pregnancy & in women of childbearing potential if not using effective methods of contraception.**

2nd line
Amitriptyline before bed - initially small dose-10mg nocte, increasing to up to 150mg (consider anticholinergic burden, and risk of serotonin syndrome)
Nortriptyline - only use if amitriptyline is effective but patient unable to tolerate side effects
4th option -Pizotifen -please see page 8 for more details
If no response consider value of MRI

Tension Type headache (TTH)

Step 1 - Simple analgesic (avoid opioids) along with explanation & reassurance. Look at triggers and consider medicine overuse headache (MOH)

Step 2 - consider alternative NSAID such as naproxen 500mg bd – maybe worthwhile taking regularly for 4-6 weeks if headaches are severe (with PPI cover if needed)

Step 3 - consider additional therapies eg acupuncture

Step 4 - if headaches are severe, frequent & persist consider amitriptyline starting at low dose of 10mg at night, slowly increasing to 75-150mg

Note: β-blockers not usually helpful & benzodiazepines should be avoided. SSRIs not helpful unless there is underlying depression

Can also consider TENS and cognitive therapies

Reconsider and exclude red flags again (see part 1). Also consider mixed headaches – Migraine & TTH and / or Medicine Overuse Headache

Consider whether MRI should be part of diagnostic process (where available)

NO - MRI not appropriate. Further advice needed about diagnosis or management

Yes and patient Accepts MRI scan

MRI SCAN

Abnormal MRI scan or patient not reassured despite normal MRI or need further advice

Normal MRI scan and patient reassured – continue with Rx – consider trials of higher dosages for longer periods

Cluster headache

Most patients with new onset cluster headaches will require referral to a neurologist for advice.

Step 1- though short lived medication is nearly always needed (subcut sumatriptan is gold standard but consider intranasal triptan). Oxygen should only be prescribed if recommended by a neurologist (link to guidance).
Usually prophylaxis is the best option
Note: β-blockers should not be used for cluster headaches

Step 2 - Prophylaxis
Prophylaxis dose should be increased rapidly; most sources suggest verapamil as first line
Verapamil 80mg TDS - starting dose then increase dose as prednisolone withdrawn
Prednisolone should be started at the same time as verapamil - 60-100mg daily for 5 days then decrease by 10mg every 3 days, so that treatment is discontinued after 2-3 weeks

Refer to Specialist

Some treatment options are available only from secondary care: Botulinum Toxin Type A (Botox®); Galcanezumab (Emgality®); Erenumab (Aimovig®); Eptinezumab (Vyepti®); Fremanezumab (Ajovy®).

Remember - lifestyle measures may help

Medicine Overuse Headache (MOH)

- Only treatment is withdrawal
- Symptoms may initially worsen on withdrawal
- Education & communication is critical.

Can occur on top of other types of headaches

Menstrual migraines can be identified via headache diary. May respond to hormonal Rx-see www.bash.org.uk

Care needed with pregnancy - these guidelines do not apply to pregnancy or children – see NICE & BASH guidelines at www.bash.org.uk

Don't forget patients often have more than one type of headache

Adult Headache Guideline

Nottingham and Nottinghamshire Adult Chronic Headache Pathway With Open Access to MRI Scanning

The following information is to support prescribers regarding the medicines aspects of the pathway, please refer to the BNF or Summary of Product Characteristics for further information on contraindications, precautions, adverse effects and interactions.

Treatment of acute migraine

A stepped approach is often recommended commencing as early as possible with an analgesic and anti-emetics/pro-kinetic if required and escalating to a 5HT1 receptor agonist (triptan) if this approach fails.

Aspirin or ibuprofen with or without paracetamol	Need to establish therapeutic levels quickly aspirin 600-900mg or ibuprofen 400-600mg paracetamol 1g
Metoclopramide or Prochlorperazine (Buccal)	Metoclopramide 10mg or Prochlorperazine (buccal) 3-6mg (available OTC for adults 18 and over)
Diclofenac suppositories	Diclofenac 50mg or 100mg – see notes below

Notes:

1. Please be aware of recent MHRA guidance on the use of anti-emetics and diclofenac. Links to the guidance is available through www.nottinghamshireformulary.nhs.uk
2. Medicine should be given as soon as the onset of an attack is recognised.
3. The addition of a gastric motility agent will aid gastric emptying, as well as relieving nausea.
4. Anti-migraine medicine containing Metoclopramide are not suitable for patients under the age of 20 years.
5. Since peristalsis is often reduced in migraine attacks, dispersible preparations may be helpful.
6. Suppositories are useful if vomiting or severe nausea present.

Adult Headache Guideline

Treatment of acute migraine in pregnancy:

First line	Non-pharmacological measures – avoidance of triggers, relaxation techniques and cognitive behavioural therapy
Second line	Paracetamol 1g
Third line	Ibuprofen 200-400mg **(avoid in 3rd trimester)**
	Sumatriptan 50-100mg

Notes:

1. Many medicines are contraindicated or have limited evidence of safety in pregnancy.
2. Risks and benefits must be discussed with the patient.
3. If treatment with medication is necessary, consider contraindications and co-morbidities.
4. There is less evidence of safety for nonsteroidal anti-inflammatories (NSAIDs) and triptans than for paracetamol.
5. Sumatriptan is the preferred triptan in pregnancy.
6. Pregnant patients should be encouraged to read leaflets about recommended medications, which can be found on the *best use of medicines in pregnancy* website (https://www.medicinesinpregnancy.org/Medicine--pregnancy/).

Triptans ($5HT_1$-receptor agonists)

Please see Nottinghamshire Formulary at www.nottinghamshireformulary.nhs.uk for further medicine information. Try using the most cost-effective preparation first line, current Nottinghamshire formulary triptans are listed below.

Quicker onset of action, shorter half life		**Slower onset of action. Longer half life. Lower incidence of side effects and may be useful where recurrence is a problem**	
Sumatriptan	Tablets 50, 100mg Injection 6mg per 0.5ml Nasal spray 10mg or 20mg per 0.1ml/dose	Naratriptan	Tablet 2.5mg
Zolmitriptan	Tablets 2.5mg or Melts 2.5, 5mg Nasal spray 5mg per 0.1ml/dose	Frovatriptan	Tablet 2.5mg
Rizatriptan	Tablets and orodispersible 5mg, 10mg Oral Lyophilisate 10mg		

Notes:

1. NICE recommends that oral triptans should be used first line and other preparations only considered if these are ineffective or not tolerated.
2. A second Triptan should not be taken if the first dose is ineffective.
3. Triptans are contraindicated in, uncontrolled hypertension, or risk factors for coronary heart disease or cerebral vascular disease.
4. Different Triptans have different profiles of 5HT site action. If the first Triptan tried fails, it is worth trying alternative ones. A pragmatic approach would be to choose the cheapest one from each group as a first line.
5. Orodispersible formulations obviate the need for water but do not get absorbed in mouth.
6. Nasal spray is useful when vomiting is a problem.

Prevention of migraine

Prophylaxis is used to reduce the number of attacks in circumstances when acute therapy, used appropriately, gives inadequate symptom control. There are no specific guidelines as to when prophylaxis should be commenced. Considerations include frequency, impact, failure of acute therapy, avoidance of medication overuse headache. Review the need for continuing migraine prophylaxis six months after the start of prophylactic treatment. The potential for teratogenic effects should be noted particularly with anti epileptic medications.

Notes:
1. Propranolol, metoprolol and timolol are licensed, but only propranolol is on formulary for this indication.
2. Start at the lowest dose and build up gradually. Maintain the maximum tolerated dose for a minimum of 6 weeks before assessing. Discuss with patient at 6 months whether a gradual reduction and elimination of prophylactic medication might be considered.
3. Amitriptyline is useful with co-existent tension type headache, disturbed sleep or depression. Consider anticholinergic burden and risk of serotonin syndrome.
4. Note that gabapentin is not recommended by NICE for prophylactic treatment of migraine.

Topiramate

Topiramate is licensed for migraine prophylaxis in adults, and it is now recommended for use in the NICE headache clinical guideline. Nottinghamshire Area Prescribing Committee has assigned topiramate as Amber 3 in the traffic light guidelines.

The SPC (summary of product characteristics) will have full information on cautions, contra-indications and side effects.

Place in therapy
This will be tailored to each patient, but as highlighted in the headache pathway, it should be considered when:

- The frequency of migraines is such that regular prophylaxis is warranted

- Advise women of childbearing potential that topiramate is associated with a risk of foetal malformations and can impair the effectiveness of hormonal contraception. It is contraindicated in pregnancy and in women of childbearing potential if an effective method of contraception is not used.

Review
Continuing therapy should be reviewed every 6 months.

Dose
Note can take 6-8 weeks before maximum effect gained.

Commence topiramate at 25mg nightly, and increase (see below) if required.

Titration Schedule
The dosage should then be increased in increments of 25 mg/day administered at 1-week intervals. If the patient is unable to tolerate the titration regimen, longer intervals between dose adjustments can be used.

Some patients may experience a benefit at a total daily dose of 50 mg/day. The recommended total daily dose of topiramate as treatment for the prophylaxis of migraine headache is 100 mg/day administered in two divided doses. No extra benefit has been shown from the administration of doses higher than 100 mg/day.

Topiramate Dosage	Morning	Evening
Week 1		25mg
Week 2	25mg	25mg
Week 3	25mg	50mg
Week 4	50mg	50mg

Contraindications
Known hypersensitivity
Breast feeding
Pregnancy

Cautions
Avoid abrupt withdrawal
Hepatic impairment
Renal impairment - The plasma and renal clearance of topiramate are decreased in patients with moderate and severe impaired renal function (CrCl ≤ 70 ml/min). In patients with moderate and severe renal impairment, half of the usual starting and maintenance dose is recommended.

Topiramate has been associated with acute myopia with secondary angle closure glaucoma, typically occurring within 1 month of starting treatment. Choroidal effusions have also been reported. If raised intraocular pressures occur – seek ophthalmology advice and stop topiramate as rapidly as possible

Side Effects
Nausea, dyspepsia and diarrhoea
Dry mouth and taste disturbance
25% of people experience anorexia/loss of appetite
Drowsiness, insomnia, dizziness
50% of people experience initial paraesthesia (which usually settles)

Rarely – reduced sweating metabolic acidosis and alopecia
Very rarely – leucopenia, thrombocytopenia and serious skin reactions

Interactions
Oestrogens – metabolism accelerated – reduced contraceptive effect
Progestogens – metabolism accelerated – reduced contraceptive effect
Glibenclamide – possibly reduces plasma concentrations
Lithium – possibly affects plasma concentration

Topiramate should be prescribed generically and tablets should be prescribed in preference to capsules due to price difference. In patients with swallowing difficulties, the contents of a capsule can be sprinkled on a small amount of food immediately prior to administration.

For further information on contraindications, precautions, adverse effects and interactions refer to the BNF or Summary of Product Characteristics.

Pizotifen

Pizotifen has been in use since the 1970s and is usually well tolerated. Due to inadequate evidence found for its effectiveness in the prophylaxis of migraine, the NICE guideline CG150 (September 2012) no longer recommends its use for the prevention of migraines in patients aged 12 and above. However, use of pizotifen in migraine prevention was not associated with safety concerns, therefore it could be considered as a 4th line option for those patients who either did not respond to the preferred treatments (propranolol/ topiramate/ amitriptyline) or could not tolerate their side effects.

Review
Continuing therapy should be reviewed every 6 months.

Dose

Adults and elderly: Usually start as 500 micrograms and increase in weekly intervals to 1.5mg daily. If needed the dose can be slowly increased to 3mg (either as a single or divided dose). Dosage should be adjusted according to individual patient requirements.

Pizotifen should not be stopped abruptly, therefore gradual withdrawal is recommended. Withdrawal symptoms include anxiety, tremors, insomnia, nausea and loss of consciousness.

Side effects
Common side effects include nausea, dry mouth, increase in body weight. Pizotifen may cause drowsiness, somnolence and dizziness. Therefore, caution should be exercised when driving or using machinery.

More detailed information can be found on the electronic medicine compendium website (https://www.medicines.org.uk/emc/product/2509/smpc/print).

Specialist recommended treatment

Some patients might not respond to standard treatment and require specialist intervention. Consultant neurologists may recommend use of medications available through secondary care only. These include:

- Botulinum Toxin Type A (botox®) - injection
- Galcanezumab (Emgality®) - solution for injection in pre-filled pen (NICE TA 659)
- Erenumab (Aimovig®) - pre-filled pen for subcutaneous injection (NICE TA 682)
- Eptinezumab (Vyepti) ® ▼-concentrate for solution for infusion (NICE TA 871)
- Fremanezumab (Ajovy®) ▼- pre-filled Pen for Injection (NICE TA 764)

More information is available on the Nottinghamshire Joint Formulary Group website.

Adult Headache Guideline

Useful Resources – these guidelines have been developed using NICE and BASH guidelines below

1. NICE Clinical Guideline CG150: Headaches in over 12's: diagnosis and management (September 2012, updated November 2015) https://www.nice.org.uk/guidance/cg150

2. NICE CKS: Migraine. Scenario: Migraine in pregnant or breastfeeding women (Last reviewed April 2019) https://cks.nice.org.uk/migraine#!scenario:2

3. The British Association for the Study of Headache (BASH) https://www.bash.org.uk/guidelines/

4. The International Headache Society https://ichd-3.org/evolution-of-ihs-classification-1-3/

Self Help Resources

Patient UK – https://patient.info/brain-nerves/headache-leaflet

Migraine Buddy App - https://migrainebuddy.com/

Migraine Trust - http://www.migrainetrust.org/

Organization for the understanding of cluster headaches - http://www.ouchuk.org

NHS Choices http://www.nhs.uk/conditions/Headache/Pages/Introduction.aspx

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Version Control- Adult Headache Guideline			
Version	Author(s)	Date	Changes
1.0	Michalina Ogejo - Medicine's Optimisation and Interface Pharmacist Richard Sheldrake - Senior Pharmacist for Newark PCN	April 2023	1. Pizotifen added back in as 4th line prophylactic option. 2. Added information on topiramate use in renal impairment. 3. Added reference and link to the BUMPS website. 4. Removed domperidone as prophylactic option. 5. Added information on specialist only prophylactic options. 6. Updated self-help resources. 7. Added headache diary (appendix). 8. Added more info re specialist referral in chart.

Appendix 1

NHS

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Headache diary

Date	Day of the week	Time when headache started	Pain Score 0-no pain 10- worst pain	Medication (name and time taken)	Comments

Use this diary to record your headaches for at least a month. It can help you to track your headaches' pattern and can be an useful aid when consulting with your healthcare professional.
You can find more information here https://www.nationalmigrainecentre.org.uk/