Headache

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How common is headache?

- UK Postal Survey in North Staffordshire
  - 93% Lifetime prevalence
  - 70% prevalence in last 3 months
  - 23% at least weekly
  - 16% experienced severe pain
  - Prevalence higher in women than men and in younger age groups
  - Chronic Daily Headache estimated at 2-3%

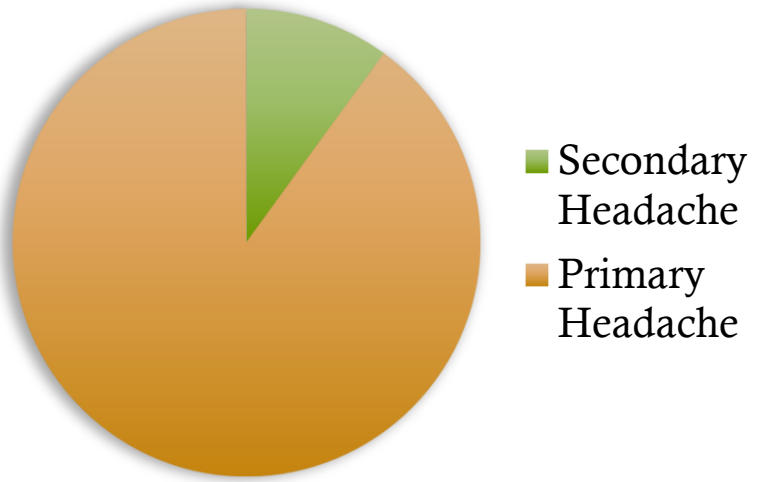
Boardman et al. Cephalalgia 2003

Primary and Secondary Headache

- Primary Headache
  - Migraine
  - Tension-type headache
  - Cluster headache
  - Trigeminal Autonomic Cephalagias
  - Thunderclap Headaches
  - Benign Cough Headache
  - Benign Exertional Headache

- Secondary Headaches
  - Medication overuse headache
  - Subarachnoid haemorrhage
  - Intracerebral haemorrhage
  - Subdural haemorrhage
  - Tumour
  - Meningitis
  - Encephalitis
  - Cerebral abscess
  - Stroke
  - Carotid/vertebral dissection
  - Hydrocephalus
  - Temporal arteritis/vasculitis
  - Pituitary tumour and pituitary apoplexy
  - Hypertensive encephalopathy
  - Phaeochromocytoma
  - Arnold chiari malformation
  - Idiopathic intracranial hypertension
  - Spontaneous intracranial hypotension
  - Hypertensive encephalopathy

Primary and Secondary Headache



- Tepper et al. Headache 2004
  - On basis of a longitudinal diary 94% of patients had migraine
  - If GP diagnosed migraine 98% had migraine
  - If GP diagnosed non-migraine 82% had migraine

Approach to the Headache Patient

What does the headache patient want?

What the patient wants most	What the doctor thinks the patient wants most
77% Explanation	96% Pain relief
69% Pain relief	68% Medication
31% Neurological examination	68% explanation

History, History, History

- Onset
- Site
- Frequency
- Duration
- Severity
- Precipitating and relieving factors
- Additional features
  - Migranous features
  - Autonomic features

3 minute neurological examination

- Ophthalmoscopy
- Visual fields
- Eye movements
- Blood pressure
- Pyramidal drift
- Tendon and plantar reflexes
- Romberg's test
- Walk on toes & heels
- Finger nose test
- Finger and hand skill
- Face movements

https://www.youtube.com/watch?v=wyBNYB0RLvU

To scan or not to scan?

- Safe
  - MRI safe.
  - CT radiation exposure
- Reassuring
  - NICE Guidance CG150. Do not scan solely for the purpose of reassurance
- Expensive
- Creates precedent
- Anxiety and concern
- Incidentalomas and the risk of VOMIT syndrome

To scan or not to scan?

- Morris et al BMJ 2009
  - Systematic review
  - Review of 19,599 MRI scans in 'normal' subjects
  - 0.7% had 'neoplastic structural abnormalities' including meningioma, Pituitary Adenoma, and low grade glioma.
  - 2% had non neoplastic but significant findings
- Simpson et al BJGP 2010
  - GP direct access CT scanning for Chronic headache
  - 4404 scans
  - Abnormal findings in 10.5%
  - Causative factor in 1.4%
- WITH MRI SCANNING RISK OF A NOT STRICTLY NORMAL SCAN POSSIBLY AS HIGH AS 25%

NICE Guidelines: Consider investigation or refer

- Worsening headache with fever
- Sudden onset headache reaching maximum intensity within 5 minutes "thunderclap headache"
- New onset neurological deficit
- New onset cognitive dysfunction
- Change in personality
- Impaired level of consciousness
- Recent (within the last 3 months) head trauma
- Headache triggered by cough/valsalva
- Headache triggered by exercise
- Headache that changes with posture
- Symptoms suggestive of giant cell arteritis
- Symptoms and signs of acute narrow-angle glaucoma
- Substantial change in characteristic of their headache

Headache diagnoses not to be missed

- Sub-arachnoid Haemorrhage
- CNS infection
- Temporal arteritis/Giant cell arteritis
- Carbon monoxide poisoning
- Sub-dural/Head injury
- Tumour

Sub-arachnoid Haemorrhage

- 90% due to aneurysmal rupture
- Thunderclap headache
  - High intensity headache. Often bi-occipital, but can occasionally be focal, Peak intensity usually in less than a minute (19% may take up to 5 minutes).
  - Commonly described as being “hit on back of the head with a baseball bat”
  - Headache may be the only symptom in 1/3 of cases
  - Typically headache lasts for days and would be unusual to resolve within 2 hours
- Associated symptoms that may be seen
  - Nausea, vomiting, neck stiffness, photophobia, seizure, alteration in conscious level, focal neurological features

Sub-arachnoid haemorrhage

- ¼ die before reaching hospital
- ¼ die in hospital
- ½ survivors have significant disability
- If considering SAH emergency hospital referral as pick up on CT brain decreases from 98% at 12 hours to 58% at 5 days and 30% at 2 weeks

CNS infection

- Meningitis
  - Headache (may be progressive or thunderclap)
  - Fever
  - Neck stiffness
  - Altered mental state
  - Petechial/purpuric rash

- Viral encephalitis
  - Flu-like prodrome
  - Progressive headache
  - Fever
  - Seizures
  - Altered mental state
  - Focal neurological signs

- Cerebral Abscess
  - Similar presentation to encephalitis
  - Focal neurological signs may be more prominent

Temporal arteritis/giant cell arteritis

- Over 50 years of age
- Headache may be localised to temporal artery, may be diffuse
- Jaw claudication and scalp tenderness
- Visual disturbance
- May be systemically unwell with weight loss and proximal muscle ache
- On examination temporal arteries hard tender beaded
- Need to do ESR and CRP
- Typically very raised, ESR > 50 (may be only slightly raised in early illness but very rarely normal)
- If diagnosis suspected start on prednisolone 60mg and refer urgently to secondary care
- If visual symptoms refer to ophthalmology
- BSR guidelines advice biopsy in all suspected cases but local standards may vary

Carbon monoxide poisoning

- Wide range of non-specific symptoms but headache is the most common.
- No defining symptoms
- High index of suspicion should be maintained, particularly in winter months
- If suspected refer to A&E as need carboxyhaemoglobin concentration measuring.

Sub-dural haematoma

- Progressive headache following on from head injury within the last 3 months.
- may be seemingly insignificant head injury in elderly
- May have altered consciousness/confusion, focal neurological signs.
- Refer urgently to medical team for CT head

Brain tumours

- Secondary metastatic tumour more common than primary
- New headache in a patient with a history of cancer (especially Lung and Breast cancer) should be treated with suspicion
- At diagnosis between 23% and 56% will experience headache
- Initial presentation with isolated headache estimated to be between 2% and 16%
- If a GP can make a diagnosis of a primary headache diagnosis at presentation, the risk of tumour is 0.045%

Recommended guidance for investigating tumour in primary care

Red Flags – presentations where the probability of an underlying tumour is likely to be >1%

- Papilloedema
- Significant alterations in consciousness, memory, confusion or co-ordination
- New epileptic seizure
- New-onset cluster headache
- History of cancer elsewhere
- Headache with abnormal findings on neurological examination

Orange flags – presentations where the probability of underlying tumour is likely to be between 0.1 and 1%

- New headache where a diagnostic pattern has not emerged after 8 weeks
- Headache aggravated by exertion or valsalva like manoeuvre
- Headaches associated with vomiting
- Headaches that have changed significantly in character
- New headache in patient over 50
- Headaches that wake patient from sleep

Kernick et al BJGP 2008

Primary headache syndromes

- Migraine
- Tension-type headache
- Trigeminal autonomic cephalagias

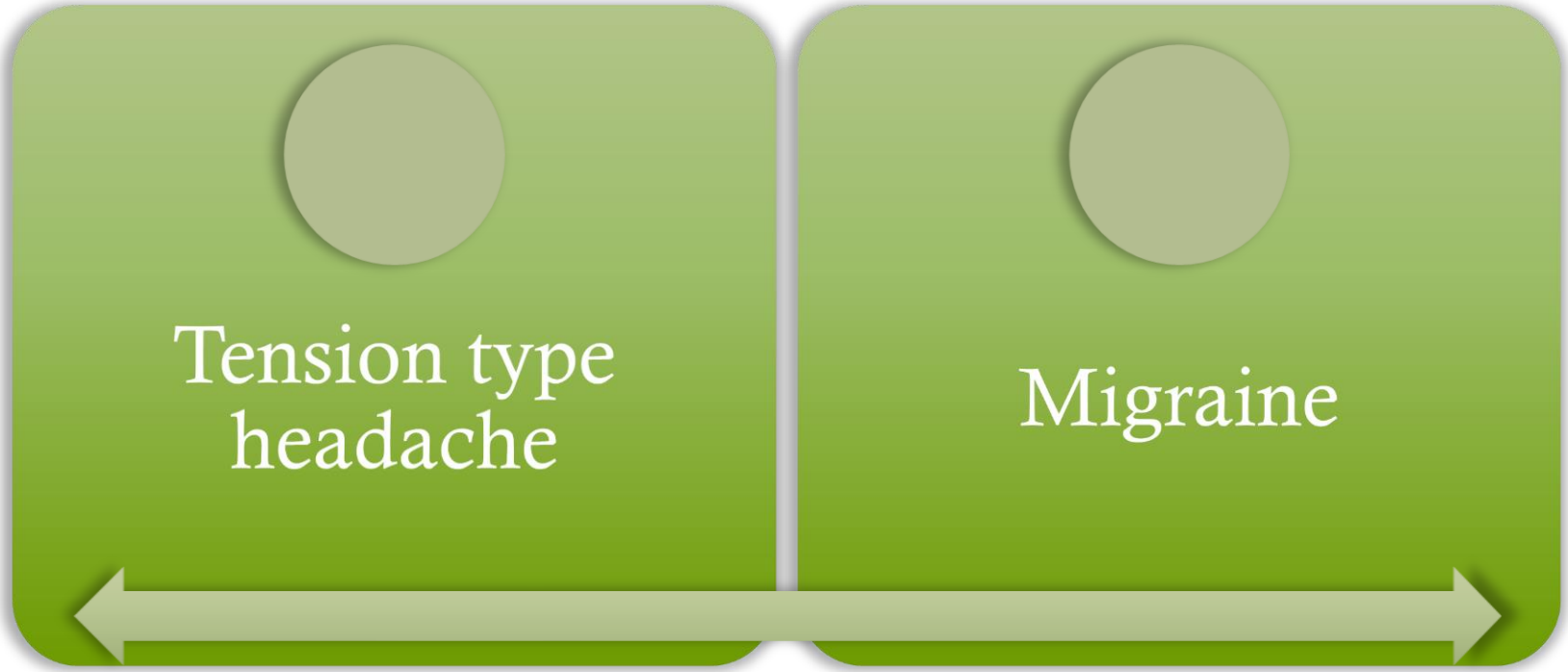
Migraine vs Tension-type headache NICE CG150

Headache feature	Tension-type headache	Migraine (with or without aura)
Pain Location	Bilateral	Unilateral or bilateral
Pain quality	Pressing/tightening	Pulsating
Pain intensity	Mild or moderate	Moderate or severe
Effect on activities	Not aggravated by routine ADL's	Aggravated by or causes avoidance of ADL's
Other symptoms	none	Photophobia/Phonophobia Aura symptoms
Duration of headache	30 min-continuous	4-72 hours in adults 1-72 hours in children/teenagers

Migraine Vs Tension-type headache

- Migraine disabling
- Patients with migraine often have tension-type headache as well
- Only 30% of patients with migraine will experience aura
- Tension-type headache featureless
- I rarely make a diagnosis of tension-type headache

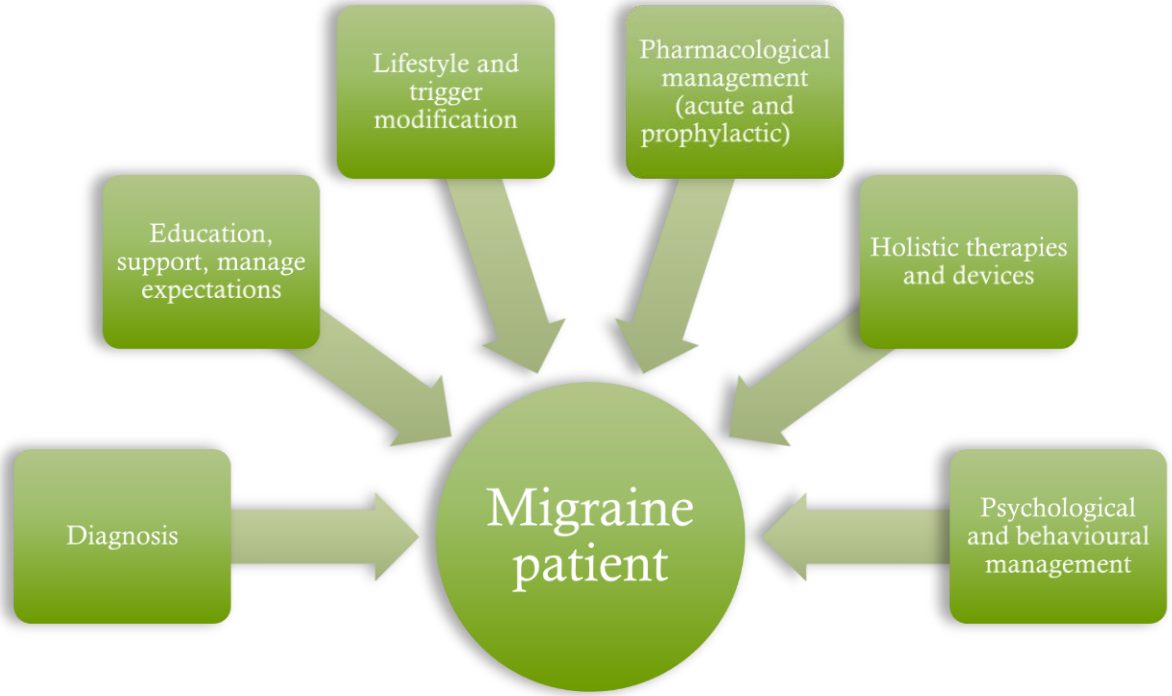
Is all headache migraine?



Migraine vs Tension-type headache

- May become chronic daily headache
  - Headache present on more than 15 days per month for at least 3 month duration
  - Not a diagnosis itself. A variant of a diagnosis
- May be complicated by medication overuse headache
  - Chronic daily headache with analgesic use (any analgesic including paracetamol, triptans, codeine) on more than 10 days a month
  - Headache characteristics may be quite variable

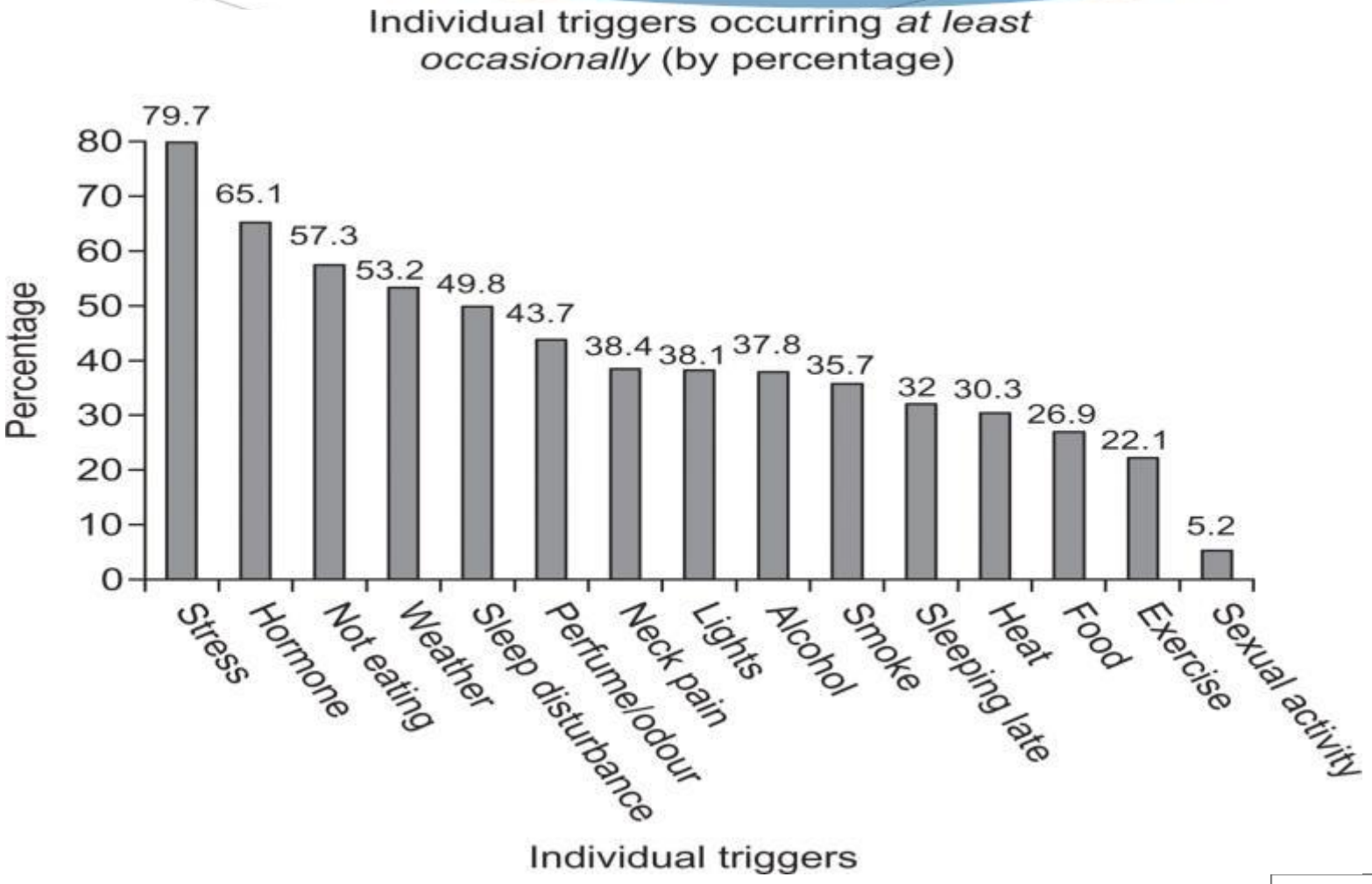
Multifaceted management of the headache patient



Education and managing expectations

- What do patients want from a headache consultation?
- NICE CG150
  - Give patients a positive diagnosis
- SOFTWARE PROBLEM NOT A HARDWARE ONE
- Migraine is a chronic long term condition.
  - Treatment is about helping the patient to learn to manage their condition not offering them a cure for the problem.
- Reassurance and legitimise symptoms.

Triggers and precipitants



Kelman L Cephalalgia 2007;27:394-402

Cephalalgia

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Lifestyle modification

- Eat healthy and eat regularly
- Get regular sleep
- Get moderate amounts of routine exercise
- Drink plenty of water
- Limit caffeine, alcohol and other drugs
- Reduce stress

Pharmacological Management

smothering the fire vs turning off the gas

Abortive management

- TRIPTANS
- NSAIDS
- PARACETAMOL
- ANTI EMETIC DRUGS

NICE CG150

- Triptan + NSAID + Antiemetic (if nausea/vomiting present)

- If unable to tolerate NSAID then try paracetamol instead

Triptans

- 7 different types
  - Some pharmacokinetic differences but limited evidence of therapeutic difference
  - 4 different routes of administration
    - Tablet
    - Orodispersible
    - Nasal spray
    - Injection
- 40-50% improvement at 2 hours
  - i.e. just because it doesn't respond to a triptan doesn't mean it isn't migraine
- Choice based on cost, tolerability, individual effect

NSAID

- Aspirin 900mg
- Ibuprofen 600mg
- Naproxen 500mg

Antiemetic

- Metoclopramide 10mg
- Domperidone 10mg
- Buccal prochlorperazine 3mg

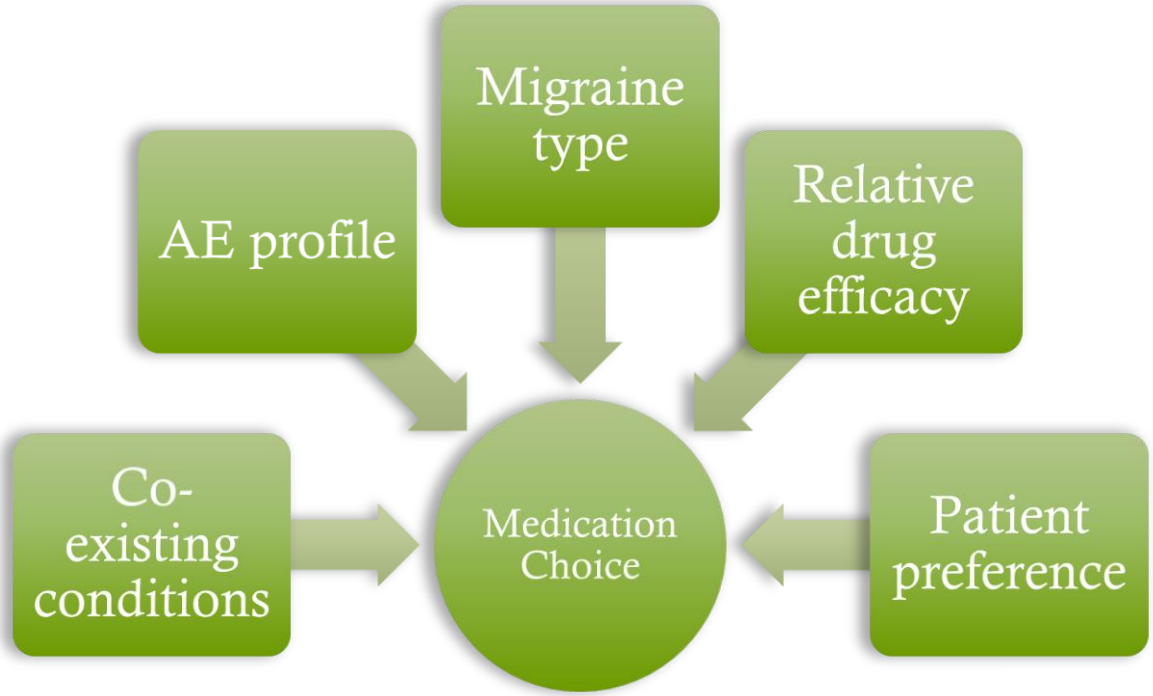
Abortive treatments

- AVOID codeine containing products as significantly higher rates of medication overuse headache .

Prophylactic medications

- Frequent headaches
  - 3-4/month – consider use of a prophylactic agent
  - >4 per month – strongly advise use of prophylactic agent
- Migraine significantly affecting daily routine
- Abortive medications contra-indicated, ineffective, intolerable or overused
- Patient preference or migraine subtype

Factors influencing choice



Prophylactic Medications

First line

- B blockers
- Topiramate
- Amitriptyline
- Candesartan

Alternatives

- Pizotifen
- Gabapentin
- Pregabalin
- Sodium Valproate
- Flunarizine
- Botulinum toxin (NICE technology appraisal 260)
- CGRP Receptor Antagonists

CGRP receptor antagonists

- Erenumab and Fremanezumab
- Designed specifically for Migraine
- Approved in Scotland but not approved by NICE
- Erenumab £365 a month

What is a good treatment response?

- Clinical trial outcomes often based on 50% reduction in headache days per month
- 1st line drugs all show about a 50% responder rate
- Placebo usually shows about a 20% responder rate
- May take up to 3 months to show a response

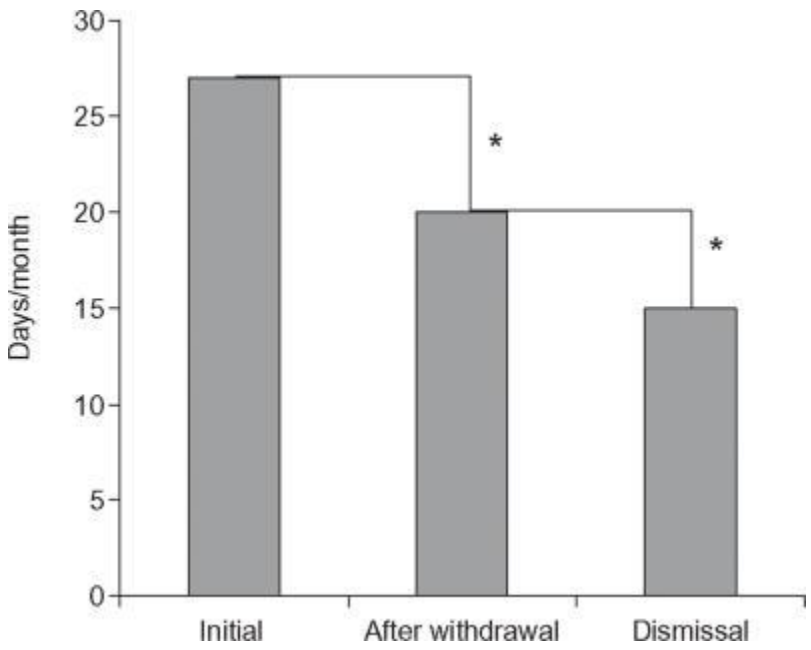
Holistic/alternative therapies

- NICE CG150
  - Acupuncture
  - Riboflavin
- Spring TMS
- Gammacore vagal nerve stimulation
- Pain Management Programme

Why does headache treatment fail?

- Misdiagnosed headache disorder or more than 1 headache disorder
- Medication overuse headache present
- Psychosocial factors
- Comorbid medical conditions
- Inappropriate treatments
- Inadequate treatment dosage or duration
- Unrealistic expectations
- Nocebo

Medication overuse headache



Zeeberg P et al. Cephalalgia 2006;26:1192-1198

- 50 % responded to withdrawal of medication alone at 2 months
- Of the remaining 50% improvement subsequently seen with introduction of prophylactic agent
- Other studies have suggested high relapse rate (50% at 5 years)

Cephalalgia

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Cluster Headache

- Severe strictly unilateral headache
- Usually frontal
- Lasts 15 mins to 3 hours
- Between 1 attack every other day and 8 attacks per day
- Often agitated during attacks
- Usually last for 3 months
- Associated autonomic features ipsilateral to the headache
  - Conjunctival injection and/or tearing
  - Nasal congestion and/or rhinorrhoea
  - Eyelid oedema
  - Facial sweating/flushing
  - Sensation of fullness in the ear
  - Miosis and/or ptosis

Cluster Headache

- Refer on for specialist management
- Need MRI
- 1st line treatments verapamil, high flow oxygen, nasal/IM triptans

Useful information sources and guidelines

- British Association for the Study of Headache (BASH)
  - www.bash.org.uk
- NICE Guidelines
  - Headaches CG 150
  - Botulinum toxin A for the prevention of Headache TA 260
- SIGN Guidelines
  - Diagnosis and management of headache in adults Guideline 107
- Migraine Trust
  - www.migrainetrust.org
- Migraine Action
  - www.migraine.org.uk