وزارة الصحة
Ministry of Health

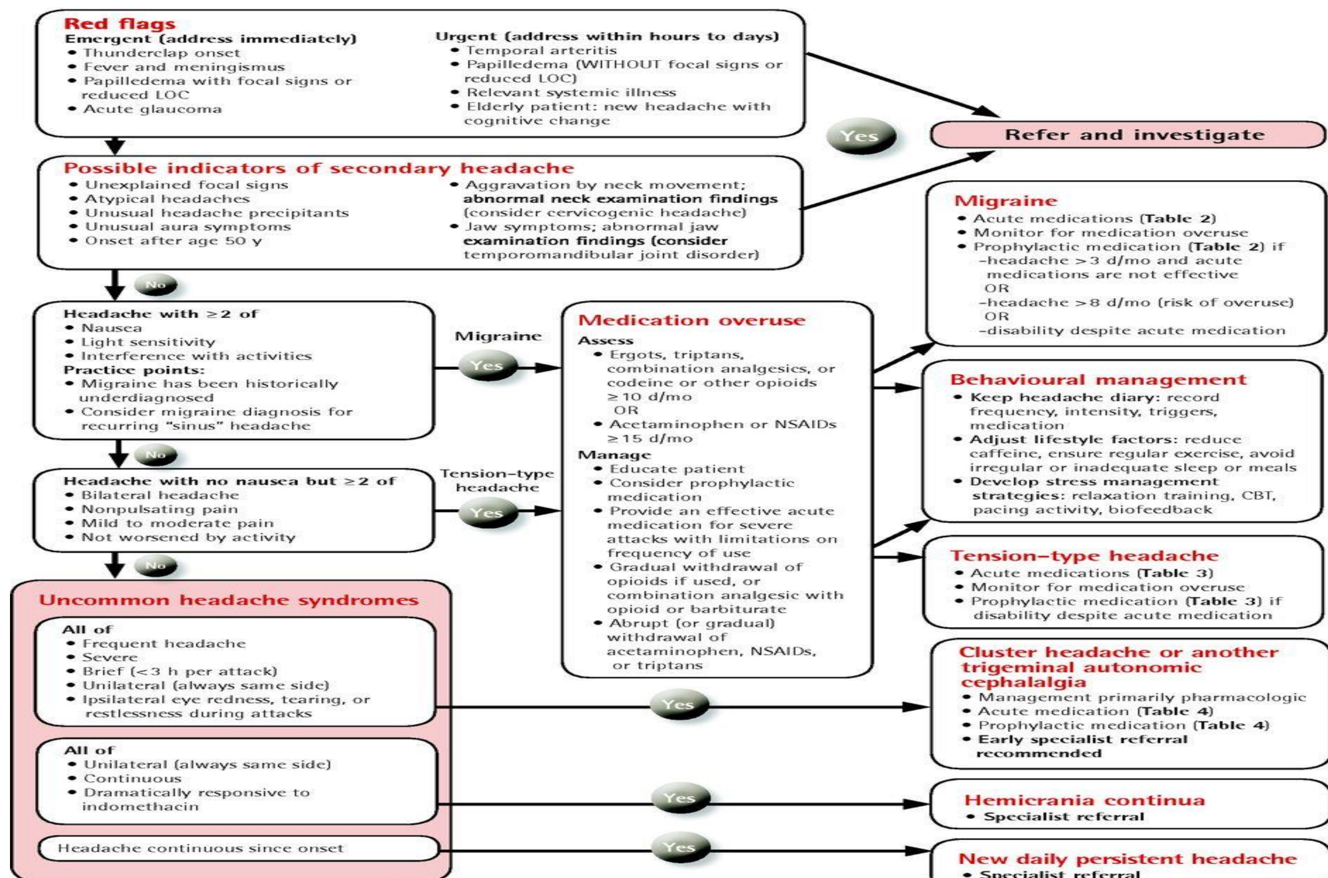
تجمع الرياض الصحي الثالث
Riyadh Third Health Cluster

Headache Clinical Practice Guidelines

Definition

Headache is a common pain condition worldwide. It is important for physicians evaluating adult patients with acute headache to determine whether the condition is benign or if it indicates dangerous neurologic or systemic pathology. The most common types of headaches are tension-type headaches, migraines, and cluster headaches, which affect approximately 40, 10, and 1 percent of the adult population, respectively.

Assessment (History and Examination)



Management

Table 2. Migraine medications: *A) Acute migraine medications. B) Prophylactic migraine medications.*

A)

TYPE	ACUTE MEDICATIONS
First line	Ibuprofen 400 mg, ASA 1000 mg, naproxen sodium 500-550 mg, acetaminophen 1000 mg
Second line	Triptans: oral sumatriptan 100 mg, rizatriptan 10 mg, almotriptan 12.5 mg, zolmitriptan 2.5 mg, eletriptan 40 mg, frovatriptan 2.5 mg, naratriptan 2.5 mg • Subcutaneous sumatriptan 6 mg if the patient is vomiting early in the attack. Consider for attacks resistant to oral triptans • Oral wafer: rizatriptan 10 mg or zolmitriptan 2.5 mg if fluid ingestion worsens nausea • Nasal spray: zolmitriptan 5 mg or sumatriptan 20 mg if patient is nauseated Antiemetics: domperidone 10 mg or metoclopramide 10 mg for nausea
Third line	Naproxen sodium 500-550 mg in combination with a triptan
Fourth line	Fixed-dose combination analgesics (with codeine if necessary; not recommended for routine use)

B)

PROPHYLACTIC MEDICATIONS	STARTING DOSE	TITRATION,* DAILY DOSE INCREASE	TARGET DOSE OR THERAPEUTIC RANGE†	NOTES
First line				
• propranolol	20 mg twice daily	40 mg/wk	40-120 mg twice daily	Avoid in asthma
• metoprolol	50 mg twice daily	50 mg/wk	50-100 mg twice daily	Avoid in asthma
• nadolol	40 mg/d	20 mg/wk	80-160 mg/d	Avoid in asthma
• amitriptyline	10 mg at bedtime	10 mg/wk	10-100 mg at bedtime	Consider if patient has depression, anxiety, insomnia, or tension-type headache
• nortriptyline	10 mg at bedtime	10 mg/wk	10-100 mg at bedtime	Consider if patient has depression, anxiety, insomnia, or tension-type headache
Second line				
• topiramate	25 mg/d	25 mg/wk	50 mg twice daily	Consider as a first-line option if the patient is overweight
• candesartan	8 mg/d	8 mg/wk	16 mg/d	Few side effects; limited experience in prophylaxis
• gabapentin	300 mg/d	300 mg every 3-7 d	1200-1800 mg/d divided into 3 doses	Few drug interactions
Other				
• divalproex	250 mg/d	250 mg/wk	750-1500 mg/d divided into 2 doses	Avoid in pregnancy or when pregnancy is possible
• pizotifen	0.5 mg/d	0.5 mg/wk	1-2 mg twice daily	Monitor for somnolence and weight gain
• onabotulinumtoxinA	155-195 units	No titration needed	155-195 units every 3 mo	For chronic migraine only (headache on ≥ 15 d/mo)
• flunarizine	5-10 mg at bedtime	No titration needed	10 mg at bedtime	Avoid in patients with depression
• venlafaxine	37.5 mg/d	37.5 mg/wk	150 mg/d	Consider for migraine in patients with depression
Over the counter				
• magnesium citrate	300 mg twice daily	No titration needed	300 mg twice daily	Effectiveness might be limited; few side effects
• riboflavin	400 mg/d	No titration needed	400 mg/d	Effectiveness might be limited; few side effects
• butterbur	75 mg twice daily	No titration needed	75 mg twice daily	Effectiveness might be limited; few side effects
• coenzyme Q10	100 mg 3 times daily	No titration needed	100 mg 3 times daily	Effectiveness might be limited; few side effects

ASA—acetylsalicylic acid.
*Dosage can be increased every 2 wk to avoid side effects. For most drugs, slowly increase to the target dose; a therapeutic trial requires several months. The expected outcome is reduction not elimination of attacks.
†If the target dose is not tolerated, try a lower dose. If the medication is effective and tolerated, continue it for at least 6 mo. If several preventive drugs fail, consider a specialist referral.
Adapted from Toward Optimized Practice.[10]

Table 3. Medications for tension-type headache

MEDICATION	DOSE
Acute	
Ibuprofen	400 mg
ASA	1000 mg
Naproxen sodium	500-550 mg
Acetaminophen	1000 mg
Prophylactic	
First line	
• amitriptyline	10-100 mg/d
• nortriptyline	10-100 mg/d
Second line	
• mirtazapine	30 mg/d
• venlafaxine	150 mg/d

ASA—acetylsalicylic acid.
Adapted from Toward Optimized Practice.[10]

Table 4. Medications for cluster headache: ***Consider early specialist referral.***

MEDICATION	DOSE
Acute	
Subcutaneous sumatriptan	6 mg
Intranasal zolmitriptan	5 mg
100% oxygen	12 L/min for 15 min through non-rebreathing mask
Prophylactic*	
First line	
• verapamil	240-480 mg/d (higher doses might be required)
Second line	
• lithium	900-1200 mg/d
Other	
• topiramate	100-200 mg/d
• melatonin	Up to 10 mg/d

*If the patient has more than 2 attacks daily, consider transitional therapy while verapamil is built up (eg, 60 mg of prednisone for 5 d, then reduced by 10 mg every 2 d until discontinued).
Adapted from Toward Optimized Practice.[10]

Patient presents with "Headache"

- Take History
- Neurological exam including BP
- Palpate Temporal arteries (Particularly if age > 50years)
- Fundoscopy

Differentials

Common	Occasional	Rare
Tension	Drug Induced	Cluster
Migraine	Fatigue	Meningitis
Sinusitis	Trigeminal Neuralgia	Intracranial Lesion
Eye Strain	Iatrogenic	Pre Eclampsia
Cervical	Temp Arteritis	Severe Hypertension

Exclude Red flags

RED FLAGS

REFER ACUTELY FOR CT IMAGING

	Clinical Features	Need to Exclude
S	Systemic Symptoms: fever, chills weight loss or Secondary Risk Factors (HIV, Cancer)	Metastasis, Infection
N	Neurological Symptoms and Signs: Weakness, Numbness, Confusion, Seizure, Atypical Aura	Stroke, Mass lesion, Encephalitis
O	Older Age at Onset greater than 50 yrs.	Temporal arteritis, Mass lesion
O	Onset: Sudden Onset (Thunderclap or during Sex)) or After HEAD Injury (All Head Injuries on anticoagulants need Imaging)	Bleed
P	Papilledema	Raised intracranial Pressure
P	Positional or Postural	Intracranial Hypotension
P	Precipitated by Valsalva Maneuver or Exertion	Raised Intracranial Pressure
P	Progressive or Pattern Change	Any Secondary Cause
Other	Headache that Wakes you Up, Headache associated with early morning Vomiting	Raised Intracranial Pressure

REFER ACUTELY to SPECIALITY

Fever and Neck Stiffness: **Meningitis**; to EMS / Neurology
Unilateral Painful Red Eye: **Acute Glaucoma**; to EMS/ Ophthalmology
Temporal Tenderness or Jaw Claudication: **Temporal Arteritis** (Take ESR, start Steroids Immediately refer to Rheumatology/ Vascular Surgery

NO RED FLAGS

Primary or Non-Serious Secondary Headache

SECONDARY HEADACHE - non serious cause

- Cervicogenic Headache: Posterior headaches, and those that fan across the scalp.
- TMJ dysfunction: Pain over the TMJ, radiation across scalp and aggravated by chewing.
- Medication Headache –e.g. Caffeine, Nitrates, Calcium Chanel Blockers, combined oral contraceptive pill (OCP). If patient has migraines with aura then OCP is contraindicated.
- Trigeminal Neuralgia: Consider facial pain with sensory hypersensitivity as a source of headache.
- Sinusitis- Frontal headache or over sinuses, may vary with posture, associated with pressure and congestion

TESTS

Possible Investigations

- Likely: None
- Possible: CBC/CRP/ESR if suspecting Temporal Arteritis
- Rare: CT

Primary headache

-Most patients who attend with recurrent / chronic headaches have MIGRAINE, TENSION or CERVICAL HEADACHE
-Patients may have more than one type, so can develop tension type headaches on underlying migraine.
-If features of both migraine and tension-type headache, class as Migraine.
-Keeping a headache diary is useful

IMAGING

REFERRAL

PRIMARY HEADACHE DISORDER

When to Image

- CT Scan when red flags are present
- No role for Xray
- Imaging is not recommended for tension headaches, cluster headaches or medication overuse headaches simply to reassure patients

When to Refer

- Any RED Flags
- Diagnostic Uncertainty

TOP TIPs

- Explore patients Ideas and Fears; Most are worried about Serious Pathology and will leave dissatisfied unless addressed.
- Patients also worry hypertension is the cause of their pain. Hypertension, unless severe is NOT a cause of headache.
- Headaches by intracranial lesions will cause other Neurological Signs and Symptoms
- Pregnant Patient in the 3rd Trimester: consider Pre Eclampsia

TYPE | **DIAGNOSTIC CRITERIA** | **MANAGEMENT**

Migraine (usual cause of chronic headaches)

Diagnostic Criteria- at least 5 attacks fulfilling 1-4
1. Lasts 4-72 hours treated or untreated.
2. At least 2 of the following
-Unilateral location
-Pulsating quality
-Moderate/severe pain
-Aggravation by routine Physical Activity (Walking/ Climbing Stairs)
3. During the headache at least 1 of:
-Nausea / vomiting
-Photophobia/ phonophbia
4. No other cause identified
Usually episodic
Can be chronic (15% of cases).
Chronic Migraine is > 15 days /month for more than 3 months.
Episodic is < 15 days per month

Migraine with Aura

Occurs in 1/3 of migraine patients
At least 2 attacks fulfilling A-B
A. More than of the following fully reversible aura symptoms: 1. Visual 2. Sensory 3. Sensory and / or language 4. Motor 5. Brainstem 6. Retinal (Typical symptoms include flickering lights, spots, partial loss of vision, numbness, pins and needles or Speech disturbance)
B. More than 2 of the following 4 Characteristics:
i. 1 aura symptom spreads gradually over >5 mins, and/or >2 symptoms occur in succession.
ii. Each individual aura symptom lasts 5-60 minutes
iii. 1 aura symptoms are unilateral
iv. Aura accompanied or followed in <60 minutes by headache
Full recovery after attacks

Migraine – acute therapy
- Simple analgesia (aspirin, paracetamol, NSAID)
- Simple analgesia + Triptan if not effective or
- Simple analgesia + Triptan + anti-emetic.

Oral absorption can be unreliable in acute migraine
Avoid COCP if any aura / severe migraine
No Triptan DURING aura
Do not prescribe codeine / morphine / tramadol or other opioids

Migraine – prophylactic therapy options
- Reduce caffeine intake; avoid excess analgesics
- Propranolol 80-240mg daily
- Topiramate 25mg od 2 weeks; 25mg bd 2 weeks; then 50mg bd
- Sodium Valproate up to 1600mg daily (not in young women)
- Amitriptyline, pizotifen

-Refer for Refractory Cases when 3 separate prophylaxis tried
- Botulinum toxin in chronic refractory cases

Medication overuse

-Medication history is crucial especially use of over the counter analgesia
-Triptans / opioids > 10 days a month for >3 months
-Simple analgesics > 15 days a month for >3 months
-Usually underlying migraine

-Only treatment is Withdrawal
-Education and Communication is Critical
-Withdraw analgesics and caffeine
- Prn ibuprofen / naproxen very sparingly
- Consider low dose amitriptyline 10-75mg nocte

Do not prescribe codeine / morphine / tramadol or other opioids
Headaches will worsen for 7- 10 days (weeks if coming off opioids)
Migraine therapy may be needed if intermittent migrainous features persist or emerge
--Refer for Refractory Cases

Tension Type headache TTH

Usually episodic; can be chronic
-Bilateral
-Pressing / Tightening (Non pulsatile) feels like a tight band
-Mild to Moderate NOT SEVERE)
-Not aggravated by routine activities
-Duration 30 mins-continious
-Deemed chronic if >15days per month
-Can occur in combination with migraine

Simple analgesics but avoid medication overuse (>15 days / month
- Treat any medication overuse
- Amitriptyline 10-75mg nocte
- **-Refer for Refractory Cases when 3 separate treatments not effective**

Cluster headache

-Severe/Very severe UNILATERAL– Orbital, Suborbital and /or temporal pain lasting 15-180 minutes
- 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 Rhinorrhea
- 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. Patients typically walk up and down or rock to and for, unlike migraineurs who are motion sensitive

Affects M:F (4:1 ratio)
-Usually aged 20+ years: Peak age 20-40
-Bouts last 6-12 weeks.
-Usually occur 1-2x year
-Rarely chronic throughout year.

Acutely
- Nasal or sc triptan prn
- 100% Oxygen 15L/min (consult neurology; not if patient is a smoker / uses E cigarettes)

Termination of cluster
- Prednisolone 60mg daily – reduce by 10mg every 3 days
- Verapamil 20-40mg tds increased if needed
- **Refer all cluster cases for specialist review + MRI**

Other Secondary Headaches

Neck
Most Common form of Secondary Causes.
- Prolonged flexion from Mobile phone use.
- Originates in neck/ back of head and fans across scalp

Trigeminal neuralgia
- Triggered unilateral facial pain
- Sudden paroxysmal
- Not continuous
- Carbamazepine 100-200mg daily; gradually increased to effect;

Ice pick / stabbing
- Sudden Severe brief fleeting head pains
- Various locations
- Seek opinion or further review

Chronic Paroxysmal Hemicrania (CPH) or Hemicrania Continua (HC)
-Unilateral Severe
-Paroxysmal or Constant respectively
-+/- Autonomic features
-15-30 mins
-Seek opinion or further review

References:
1. Steiner, T.J., Jensen, R., Katsarava, Z. *et al.* Aids to management of headache disorders in primary care (2nd edition). *J Headache Pain* **20**, 57 (2019).
2. Headaches in over 12s: diagnosis and management NICE Clinical guideline [CG150] Published date: September 2012 Last updated: November
3. The British Association for the Study of Headache (BASH) National headache management system for adults 2019
4. Dodick, DW . Clinical clues and clinical rules: primary vs secondary headache. Adv Stud Med 2003; 3(6c): S550–S555.

APPROVL			
	Name:	**Position:**	**Signature:**
Prepared By:	Dr. Mohammed AlQahtani	FM Consultant	
Reviewed and Approved By:	Dr. Mansoor Allajhar Dr. Musa Althwayee Dr. Ahmed Al Zahrani Dr. Hajar Al Suma Dr. Ahlam Al Harbi	FM Consultants	

Adopted from;

AAFP

CHI Guidelines