DHA TELEHEALTH CLINICAL GUIDELINES

FOR VIRTUAL MANAGEMENT

OF HEADACHE IN ADULTS – 19

Version 1

Issue date: 27/07/2021

Effective date: 27/09/2021

Health Policies and Standards Department

Health Regulation Sector (2021)

INTRODUCTION

Dubai Health Authority (DHA) is the responsible entity for regulating, licensing and monitoring health facilities and healthcare professionals in the Emirate of Dubai. The Health Regulation Sector (HRS) is an integral part of DHA and was founded to fulfil the following overarching strategic objectives:

Objective #1: Regulate the Health Sector and assure appropriate controls are in place for safe, effective and high-quality care.

Objective #2: Position Dubai as a global medical destination by introducing a value-based, comprehensive, integrated and high-quality service delivery system.

Objective #3: Direct resources to ensure happy, healthy and safe environment for Dubai population.

ACKNOWLEDGMENT

This document was developed for the Virtual Management of Headache in Adults. in collaboration with Subject Matter Experts. The Health Policy and Standards Department would like to acknowledge and thank these professionals for their dedication toward improving the quality and safety of healthcare services.

The Health Regulation Sector

Dubai Health Authority

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EXECUTIVE SUMMARY

Telehealth is based on Evidence Based Practice (EBP) which is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient. It means integrating individual clinical expertise with the best available external clinical evidence and guidelines from systematic research.

EBP is important because it aims to provide the most effective care virtually, with the aim of improving patient outcomes. As health professionals, part of providing a professional service is ensuring that practice is informed by the best available evidence.

This guideline is presented in the format comprising of clinical history/symptoms, differential diagnosis, investigations and management. Identification of 'Red Flags' or serious conditions associated with the disease is an essential part of this telehealth guideline as it aids the physician to manage patients safely and appropriately by referrals to ER, family physicians or specialists for a face to face management.

Headache is one of the most common and debilitating pain conditions in the world. According to the World Health Organization, almost half of the adults in the world have had a headache in the past year. The World Health Organization also names headache the third leading cause of disability in the world and the number one cause of disability in individuals under the age of 50. Headaches are a major cause of absenteeism from work and school. They also cause a heavy personal toll in terms of social life, family life, and anxiety and depression due to fear of the next headache. Headaches affect people of all races, ages, and geographical location

DEFINITIONS/ABBREVIATIONS

Virtual Clinical Assessment: Is the evaluation of the patient's medical condition virtually via telephone or video call consultations, which may include one or more of the following: patient medical history, physical examination and diagnostic investigations.

Patient: The person who receives the healthcare services or the medical investigation or treatment provided by a DHA licensed healthcare professional.

ABBREVIATIONS

CT	:	Computed Tomography
DHA	:	Dubai Health Authority
EBP	:	Evidence Based Practice
ER	:	Emergency Room
ICP	:	Intracranial Pressure
LP	:	Lumbar Puncture
MRI	:	Magnetic Resonance Imaging
NDPH	:	New Daily Persistent Headaches
NSAIDs	:	Nonsteroidal Anti-Inflammatory Drugs
TTH	:	Tension-Type Headache

1. BACKGROUND

1.1. Headaches are a major cause of absenteeism from work and school. They also cause a heavy personal toll in terms of social life, family life, and anxiety and depression due to fear of the next headache. Headaches affect people of all races, ages, and geographical location.

2. SCOPE

2.1. Telehealth services in DHA licensed Health Facilities.

3. PURPOSE

3.1. To support the implementation of Telehealth services for patients with complaints of Headache in Dubai Health Authority (DHA) licensed Health Facilities

4. APPLICABILITY

4.1. DHA licensed physicians and health facilities providing Telehealth services.

4.2. Exclusion for Telehealth services are as follows

4.2.1. Emergency cases where immediate intervention or referral is required.

4.2.2. Prescribe Narcotics, Controlled or Semi-Controlled medications.

5. RECOMMENDATION

5.1. Causes and Pathophysiology

5.1.1. Headache pain results from signals interacting among the brain, blood vessels, and surrounding nerves. During a headache, specific nerves of

the blood vessels are activated and send pain signals to the brain. It's not clear, however, why these signals are activated in the first place.

5.1.2. There is a migraine "pain center," or generator, in the mid-brain area. A migraine begins when overactive nerve cells send out impulses to the blood vessels. This causes the release of prostaglandins, serotonin, and other substances that cause swelling of the blood vessels in the vicinity of the nerve endings, resulting in pain.

5.1.3. Headaches that occur suddenly (acute onset) are usually caused by an illness, infection, cold, or fever. Other conditions that can cause an acute headache include sinusitis, pharyngitis, or otitis.

5.1.4. In some cases, the headaches may be the result of a blow to the head (trauma) or, rarely, a sign of a more serious medical condition.

5.1.5. Common triggers of tension-typeheadaches or migraine headaches include:

a. Emotional stress related to family and friends, work, or school
b. Alcohol use
c. Skipping meals
d. Changes in sleep patterns
e. Excessive medication use
f. Depression

g. Other causes of headaches include eye strain or neck and back strain caused by poor posture

5.2. Headaches and Hereditary

5.2.1. Headaches, especially migraines, have a tendency to run in families. Children who have migraines usually have at least one parent who also suffers from the condition. Headaches also can be triggered by certain environmental factors that are shared in a family's household, such as:

a. Second-hand tobacco smoke

b. Strong odors from household chemicals or perfumes

c. Exposure to certain allergens

d. Eating certain foods

5.2.2. Stress, pollution, noise, lighting, and weather changes are other environmental factors that can trigger headaches for some people. People with migraines may inherit abnormalities in certain areas of the brain, as well as the tendency to be affected by certain migraine triggers, such as fatigue, bright lights, weather changes, and others.

5.3. Types of Headaches

5.3.1. A comprehensive headache classification guide was established by the International Headache Society and includes more than 150 headache

categories. Based on research, a practical headache classification divides headache into two main categories primary and secondary headaches.

5.4. Primary headaches

5.4.1. Primary headaches are those that are not the result of another medical condition. The category includes tension-type, migraine, and cluster headaches.

5.4.2. Tension-type headaches are the most common type of headache. They tend to be mild to moderate, non-throbbing, and occur on both sides of the head (bilateral). They usually do not get worse during routine activities (bending over, walking stairs, etc.) Because tension-type headaches tend to be mild, patients usually treat them successfully with over-the-counter medications. Patients should be aware that using over-the-counter medications too often can lead to long term (chronic) daily headache.

5.4.3. Migraines are the second most common type of primary headaches. The exact cause of migraines is unknown, although they are caused by changes in the nerves and blood vessels. Migraines are also related to changes in the brain and inherited abnormalities in certain areas of the brain. Migraine pain is moderate to severe, often described as pounding or throbbing. Migraines can last from 4 hours to 3 days and usually occur

less than 15 times per month. Migraine symptoms include sensitivity to light, noise or odors, nausea or vomiting; loss of appetite; and stomach upset or abdominal pain.

5.4.4. Cluster headaches are the most severe, type of primary headache. The pain of a cluster headache is intense and has a burning or stabbing quality that is throbbing or constant. The pain is so severe that most patients with cluster headache cannot sit still and will often pace during an attack. The pain is located behind one eye or in the eye region, without changing sides. The term “cluster headache” refers to headaches that come in a group, or cluster. Cluster headaches occur one to eight times per day during a cluster period, which may last 2 weeks to 3 months. The headaches may disappear completely (go into "remission") for months or years, only to recur.

5.4.5. New daily persistent headaches (NDPH) start abruptly as a headache that is new to the patient. The patient is able to pinpoint the brief period of time (within 72 hour) when the headache appeared. While these headaches may not be related to other diseases, they tend to be constant or persistent without any remission, located on both sides of the head (bilateral), and don’t respond to many medications.

5.4.6. Refer to APPENDIX 1 for characteristics of migraine, tension-type and cluster headache syndromes.

5.5. Secondary headaches

5.5.1. Secondary headaches, or those that result from another medical or neurological condition, that includes:

a. Sinus headaches are associated with a deep and constant pain in the cheekbones, forehead, or bridge of the nose. The pain usually gets worse with sudden head movement or straining and occurs with other acute sinus symptoms, such as nasal discharge, foul taste in the mouth, a feeling of fullness in the ears, fever, facial swelling, and pain over the involved sinus.

b. Cervicogenic headache should be considered in patients with neck pain and occipital head pain, with or without pain radiation to other head regions (or face), when pain is precipitated or aggravated by neck movements or sustained neck postures and there are abnormalities on examination of the neck (abnormal movement, muscle tone, or muscle tenderness). If the headache occurs after neck trauma and persists for more than 3 months, the term "chronic headache attributed to whiplash injury" should be used. Caution: Patients with migraine often complain of neck discomfort during a

headache and may have muscular tender points. These appear to be secondary to the migraine pain, and do not necessarily indicate a neck disorder as cause of the headache.

c. Post-traumatic headache should be diagnosed when a new headache disorder begins within 7 days of a head injury. These may occur even after a mild head injury. If the headache persists for more than 3 months, it is termed a chronic posttraumatic headache.

d. Temporomandibular disorder should be considered in patients with headache and/or facial pain who have painful jaw clicking, jaw locking, tenderness of muscles of mastication, tenderness of the temporomandibular joints, or limitation of mandibular movement.

5.5.2. There are many potential reasons for secondary headache, such as:

a. Blood vessel disorders in the head or neck, such as a brain aneurysm, a carotid artery tear, or inflammation (temporal arteritis)

b. Infection, such as meningitis or encephalitis

c. Medication related: The medication may be the direct cause of headaches. For example, headache is a side effect of the blood pressure medicine nifedipine.

d. Withdrawal headache. Headaches can occur when a substance or medication is suddenly stopped. Examples include caffeine

withdrawal headache or headache after abruptly stopping long term use of pain relievers.

6. DIAGNOSIS AND EVALUATION

6.1. The appropriate evaluation of headache complaints includes the following:

6.1.1. Rule out serious underlying pathology and look for other secondary causes of headache

6.1.2. Determine the type of primary headache using the patient history as the primary diagnostic tool. There may be overlap in symptoms, particularly between migraine and tension-type headache (TTH) and between migraine and some secondary causes of headache such as sinus disease.

6.2. A systematic case history is the single most important factor in establishing a headache diagnosis and determining the future work-up and treatment plan. Imaging is not necessary in the vast majority of patients presenting with headache. Nevertheless, brain imaging is warranted in the patients with danger signs suggesting a secondary cause of headache

6.3. History and evaluation

6.3.1. A thorough history can determine the need for further investigations and imaging exams. A systematic history should include the following:

a. Age at onset • Presence or absence of aura and prodrome

b. Frequency, intensity, and duration of attack

c. Number of headache days per month

d. Time and mode of onset

e. Quality, site, and radiation of pain

f. Associated symptoms and abnormalities

g. Family history of migraine

h. Precipitating and relieving factors

i. Exacerbation or relief with change in position (e.g., lying flat versus upright)

j. Effect of activity on pain

k. Relationship with food/alcohol

l. Response to any previous treatment

m. Review of current medications

n. Any recent change in vision

o. Association with recent trauma Any recent changes in sleep, exercise, weight, or diet

p. State of general health

q. Change in work or lifestyle (disability)

r. Change in method of birth control (women)

s. Possible association with environmental factors

t. Effects of menstrual cycle and exogenous hormones (women)

6.3.2. Assessment of the mental status should be carried out by the treating doctor virtually. The examination of an adult (via video call) with headache complaints should include:

a. Level of orientation

b. Level of consciousness

c. Speech

d. Face - look for any weakness/ deviation etc.

6.3.3. Low-risk features: The following features can serve as indicators of patients who are unlikely to have serious underlying cause for headache

a. Age ≤50 years

b. Features typical of primary headaches

c. History of similar headache

d. No abnormal neurologic findings

e. No concerning change in usual headache pattern

f. No high-risk comorbid conditions

g. No new or concerning findings

6.3.4. Patients with headache who meet these criteria do not require referral and imaging.

7. RED FLAGS

7.1. The mnemonic SNOOP is a reminder of the danger signs ("red flags") for the presence of serious underlying disorders that can cause acute or subacute headache.

7.1.1. **S**ystemic symptoms, illness, or condition (e.g., fever, weight loss, cancer, pregnancy, immunocompromised state, including HIV)

7.1.2. **N**eurologic symptoms (e.g., confusion, impaired alertness or consciousness, blurred vision, focal neurologic symptoms, neck rigidity, or seizures)

7.1.3. **O**nset is new (particularly for age >50 years) or sudden (e.g., "thunderclap")

7.1.4. **O**ther associated conditions or features (e.g., head trauma, drug use, or toxic exposure; headache awakens from sleep, is worse with Valsalva manoeuvres, or is precipitated by cough, exertion, or sexual activity)

7.1.5. **P**revious headache history with headache progression or change in attack frequency, severity, or clinical features

7.2. Any of these findings should prompt referral for face to face assessment and further investigation, including brain imaging with magnetic resonance imaging (MRI) or computed tomography (CT).

8. EMERGENCY EVALUATION

8.1. A small proportion of patients present with serious or life-threatening headaches require referral for emergency diagnosis and treatment. These include:

8.1.1. Sudden onset "thunderclap" headache – Severe headache of sudden onset (i.e., that reaches maximal intensity within a few seconds or less than one minute after the onset of pain) is known as thunderclap headache because its explosive and unexpected nature is likened to a "clap of thunder." Thunderclap headache requires urgent evaluation as such headaches may be harbingers of subarachnoid haemorrhage and other potentially ominous etiologies.

8.1.2. Acute or subacute neck pain or headache with Horner syndrome and/or neurologic deficit – Cervical artery dissection is usually associated with local symptoms including neck pain or headache, and often results in ischemic stroke or transient ischemic attack.

8.1.3. Headache with suspected meningitis or encephalitis – Fever, altered mental status, with or without nuchal rigidity may indicate central nervous system infection.

8.1.4. Headache with global or focal neurologic deficit or blurred vision – Headache is the primary symptom of increased ICP, which should be

suspected when accompanied by blurred vision, focal neurologic deficit, or repeated episodes of nausea and vomiting.

8.1.5. Headache with orbital or periorbital symptoms – Headache with visual impairment, periorbital pain, or ophthalmoplegia could indicate acute angle closure glaucoma, infection, inflammation, or tumor involving the orbits.

8.1.6. Headache and possible carbon monoxide exposure.

9. FURTHER EVALUATION

9.1. Imaging is usually not warranted for patients with a stable migraine pattern and a normal neurologic assessment, although a lower threshold for imaging is reasonable for patients with atypical migraine features or in patients who do not fulfil the strict definition of migraine. As an example, imaging is indicated for patients presenting with recent-onset headache that is featureless (i.e., bilateral, non-throbbing, without nausea and without sensitivity to light, sound, or smell). However, imaging for no other reason than reassurance is sometimes performed in clinical practice. It is important that the clinician provide the patient with a clear explanation of both the diagnosis and the reason for imaging, especially if it is being performed in someone suspected of having primary headache

9.2. Imaging — CT or MRI of the head is the preferred imaging exam for headache and common modalities used to diagnose many causes of secondary headache. Choice of

exact body part (e.g., head, neck, face) and use of contrast varies with clinical scenario.

9.3. Indications for imaging — Patients with the danger signs or other features suggesting a secondary headache source will require imaging

9.4. Lumbar puncture — LP for CSF analysis is urgently indicated in patients with headache when there is clinical suspicion of subarachnoid haemorrhage in the setting of a negative or normal head CT. In addition, LP is indicated when there is clinical suspicion of an infectious, inflammatory, or neoplastic aetiology of headache.

9.5. Telemedicine physician will refer patients to concerned specialist if CT scan, MRI, LP or any further investigation as needed.

10. MANAGEMENT

10.1. Refer to APPENDIX 1 for the Virtual Management of Headache in Adults Algorithm.

10.2. The proper treatment will depend on several factors, including the type and frequency of the headache and its cause. Not all headaches require medication management. Treatment may include education, counselling, stress management as well as medications. The treatment prescribed will be tailored to meet the patient's specific needs.

10.2.1. Headache education includes identifying and recording what triggers headache, such as lack of sleep, not eating at regular times, eating certain

foods or additives, caffeine, environment, or stress. Avoiding headache triggers is an important step in successfully treating the headaches.

10.2.2. Counselling in the form of one-on-one sessions, group therapy, or support groups can help patient identify headache triggers and teach them useful coping techniques.

10.2.3. Stress management. To successfully treat headaches, it is important to identify what causes or triggers the headaches. Patient should learn ways to cope or remove the stressful activities or events. Relaxation techniques are helpful in managing stress and include deep breathing exercises, progressive muscle relaxation, mental imagery relaxation.

10.2.4. Medications. There are three types of headache medications, including symptomatic relief, abortive (treats an individual attack), and preventive medications (reduce the frequency and severity of individual attacks).

10.2.5. Some people can treat their headaches without medications. Patient can apply an ice pack or heating pad to any tight areas in the neck and shoulders or also can try massaging the area.

10.3. Acute Pharmacological Treatment

10.3.1. Migraine Headache:

a. Migraine is a common and disabling primary headache disorder. Practice has gradually shifted from a treatment paradigm involving

gradually escalating abortive therapy towards now starting with combination therapy—non-steroidal anti-inflammatory drugs (NSAIDs) or paracetamol and triptan.

b. Triptan plus NSAIDs combination was more effective than other acute migraine approaches, including triptan monotherapy, therefore, offers patients the best hope of rapid migraine resolution for an acute attack. The guideline's recommendation includes an antiemetic, even if nausea is not pronounced, to counter gastric stasis and so facilitating tablet absorption and pain relief. The European Medicines Agency issued a warning about domperidone being associated with a small risk of sudden cardiac death and fatal arrhythmias, particularly in those aged over 60 years. They recommended avoiding its prolonged use or doses above 30 mg daily. Patients taking medications that prolong the electrocardiography Q wave to T wave interval should avoid it and those with cardiac comorbidities should exercise caution.

10.4. Acute Migraine Management

10.4.1. National Institute of Health and Care Excellence (NICE) guidelines

a. Combination therapy: triptan + non-steroidal anti-inflammatory drug (NSAID) or paracetamol + antiemetic

b. Alternatively (per patient request): a single agent (triptan, NSAID or paracetamol) ± antiemetic

10.4.2. NSAID

a. Aspirin 600–900 mg (ideally effervescent)

b. Ibuprofen 600–800 mg

c. Naproxen 500–1000 mg

d. Diclofenac 50–75 mg (or 100 mg suppository)

e. Tolfenamic acid 200 mg

10.4.3. Antiemetics for nausea and/or as a prokinetics such as

a. Domperidone 10 mg up to three times a day (or 60 mg suppository)

b. Metoclopramide 10 mg

10.4.4. The triptans It is advised to use a triptan at the start of the headache phase of a migraine attack, since there is no evidence of efficacy if taken during preceding aura. Using a triptan at the start of the headache may reduce headache recurrence, prevent disability and possibly reduce central sensitisation. The difficulty arises in chronic migraines, since taking the triptan early can lead to a pattern of increasing use and medication-overuse headache. We should try to help these people to identify early features that might indicate an ensuing severe migraine attack, as the triptan should be reserved for these headaches. It is

important to explain that the triptan should be used, on average, on no more than 2 days per week (10 days per month) to reduce the risk of a triptan-overuse headache.

10.4.5. The triptans—eletriptan, naratriptan, rizatriptan, sumatriptan, zolmitriptan—are 5HT1B/1D receptor agonists with vasoconstrictive effects on blood vessels. The choice of triptan depends on efficacy, side effects, the duration of the headache, coexisting vomiting, the most effective use of a triptan depends partly upon its route of administration. Thus, the most effective sumatriptan preparation for acute relief at 2 h (based on numbers needed to treat) was subcutaneous 6 mg, then intranasal 20 mg and then oral 100 mg formulations. While subcutaneous sumatriptan is most effective, it has more adverse events and costs more than triptans by other routes. The route of administration of the triptan is therefore best tailored to the individual's migraine attack. For example, if the migraine has a rapid onset, patients may try a fast-acting oral triptan such as rizatriptan, zolmitriptan or eletriptan, or nasal preparations that are faster still (zolmitriptan and sumatriptan); alternatively, the subcutaneous sumatriptan, which has the fastest onset of action.

10.5. Safety and side effects

10.5.1. We find the triptans to be well tolerated overall. The reported incidence of minor adverse effects does not differ markedly between the triptans but depends on speed of onset of action; people taking subcutaneous sumatriptan report more adverse effects than those taking oral sumatriptan. The triptans with a longer half-life and slower onset of action, such as naratriptan have fewer side effects. The adverse effects of the oral triptans are similar, although dizziness and sedation occur more with rizatriptan and zolmitriptan than with sumatriptan and naratriptan There are cardiovascular safety concerns associated with triptan use due to the presence of 5HT1B receptors on vascular smooth muscle. We avoid triptans in people with uncontrolled hypertension, cardiovascular and/or cerebrovascular disease. However, in clinical trials, cardiovascular complications were fewer than one per million exposed, and a recent systematic review of cardiovascular safety data identified no strong cardiovascular safety issues. Triptan sensations such as burning or tingling in the chest or limbs are relatively common (7%), but clinicians can reassure patients that this is not associated with cardiac ischaemia

10.6. Triptans in pregnancy and breast feeding

10.6.1. The major concern for migraine medications during pregnancy is of potential teratogenicity. Practice during pregnancy is to continue triptans only if benefit outweighs risk. The current NICE headache guideline states that triptans can and should be considered for pregnant patients experiencing disabling headache attacks when other therapies have proven unhelpful and when patients have been counselled about their use in pregnancy. Triptans are generally considered compatible with breast feeding as less than 10% of the drug dose appears in breast milk; however, there are no large studies in this area.

10.7. Migraine prevention

10.7.1. Migraine preventative treatments aim to reduce the frequency and severity of attacks and may help reduce the frequency of analgesic use. It is usually unrealistic for patients to expect complete headache cessation and it can be useful to have a discussion with patients about realistic goals of treatment. Prophylactic treatment is typically considered if there are more than four migraine days per month. However, preventative therapy may also be given for less frequent but very disabling attacks.

10.7.2. Most medications used as preventatives were originally used for a different indication, and the evidence for individual agents varies. The agents used can be classified into antiepileptic drugs, beta blockers, antidepressants, serotonergic antagonists (which will require a face to face consultation), calcium channel antagonists, angiotensin modulators (ACE inhibitors and angiotensin-receptor inhibitors), nutrients and herbal products.

10.7.3. The current NICE guideline suggests first trying either topiramate or a beta blocker. If both are ineffective or contraindicated, then consider acupuncture, botulinum toxin or riboflavin.

10.7.4. It is important to note that topiramate, flunarizine and beta blockers can exacerbate depression. Weight gain can be a concern with beta blockers, pizotifen, flunarizine and valproate. Beta blockers cannot be used in people with asthma (candesartan is a useful alternative with equivalent efficacy to propranolol). Topiramate can reduce the efficacy of the contraceptive pill. Also, many agents are potentially teratogenic and this should be mentioned to women of childbearing age. The general rules of thumb are to start treatment at a low dose, gradually increasing to an initial target dose. If there is no effect and no significant side effects, the dose can be further increased for some drugs. We continue the

medication for at least 3 months to evaluate efficacy. If effective (about a 50% improvement) the drug may be continued for 6 months, although there is some evidence of fewer rebound headaches if continued for 12 months.

10.7.5. Refer to APPENDIX 3 for summary of medication used to prevent migraine.

10.8. Tension-type headache:

10.8.1. For patients with pure episodic tension-type headache (TTH), we recommend treatment with simple analgesics such as nonsteroidal anti-inflammatory drugs (NSAIDs) or aspirin. Reasonable choices include a single dose of ibuprofen (400 mg), naproxen sodium (220 mg or 550 mg) or aspirin (650 to 1000 mg). Acetaminophen (1000 mg) is probably less effective than NSAIDs or aspirin, but is preferred in pregnancy.

10.8.2. The combination of caffeine with the simple analgesics acetaminophen, aspirin, or ibuprofen is more effective for the treatment of TTH than simple analgesic monotherapy, although side effects are likely to be more frequent with combination therapy. The role of caffeine combined with NSAIDs other than ibuprofen has not been adequately examined. For patients with TTH that is unresponsive or poorly responsive to monotherapy with simple analgesics, caffeine combined with simple

analgesics is used. A reasonable choice is a single dose of two tablets of combined acetaminophen 250 mg, aspirin 250 mg, and caffeine 65 mg.

10.9. Cluster headache:

10.9.1. Treatment strategies are either abortive (acute pain relief), transitional or prophylactic. The first-line abortive strategy is subcutaneous sumatriptan 6 mg (maximum two per day), with most people obtaining pain relief within 15 min (effective in 75%). If this cannot be used or tolerated, intranasal sumatriptan 20 mg or zolmitriptan 5 mg are alternatives but can take up to 30 min for their full effect. Home oxygen can be very useful at high flow, 100% concentration, via a non-rebreathe mask at 12–15 L/min for up to 20 min.

11. REFERRAL CRITERIA

11.1. Referral Criteria to Family Physician/ Specialist

11.1.1. Headaches that are increasing in intensity or frequency over time

11.1.2. Headaches that require daily use of pain-relieving medications

11.1.3. Headache not responding to medication

11.1.4. Patient needs CT scan, MRI, or any further investigation

11.1.5. Any atypical headache presentation

11.1.6. Older than 50 years

11.2. Referral to ER

11.2.1. Headache that occurs after a head injury

11.2.2. Headache associated with:

a. Fever

b. Vomiting

c. Neck stiffness

d. Blurred vision

e. Difficulty speaking

f. Numbness or weakness of the arms or legs

g. Altered mental status of Loss of consciousness

11.2.3. Very severe headache that comes on suddenly

11.2.4. Severe headache in pregnancy

11.2.5. Tenderness over temporal artery.

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APPENDICES

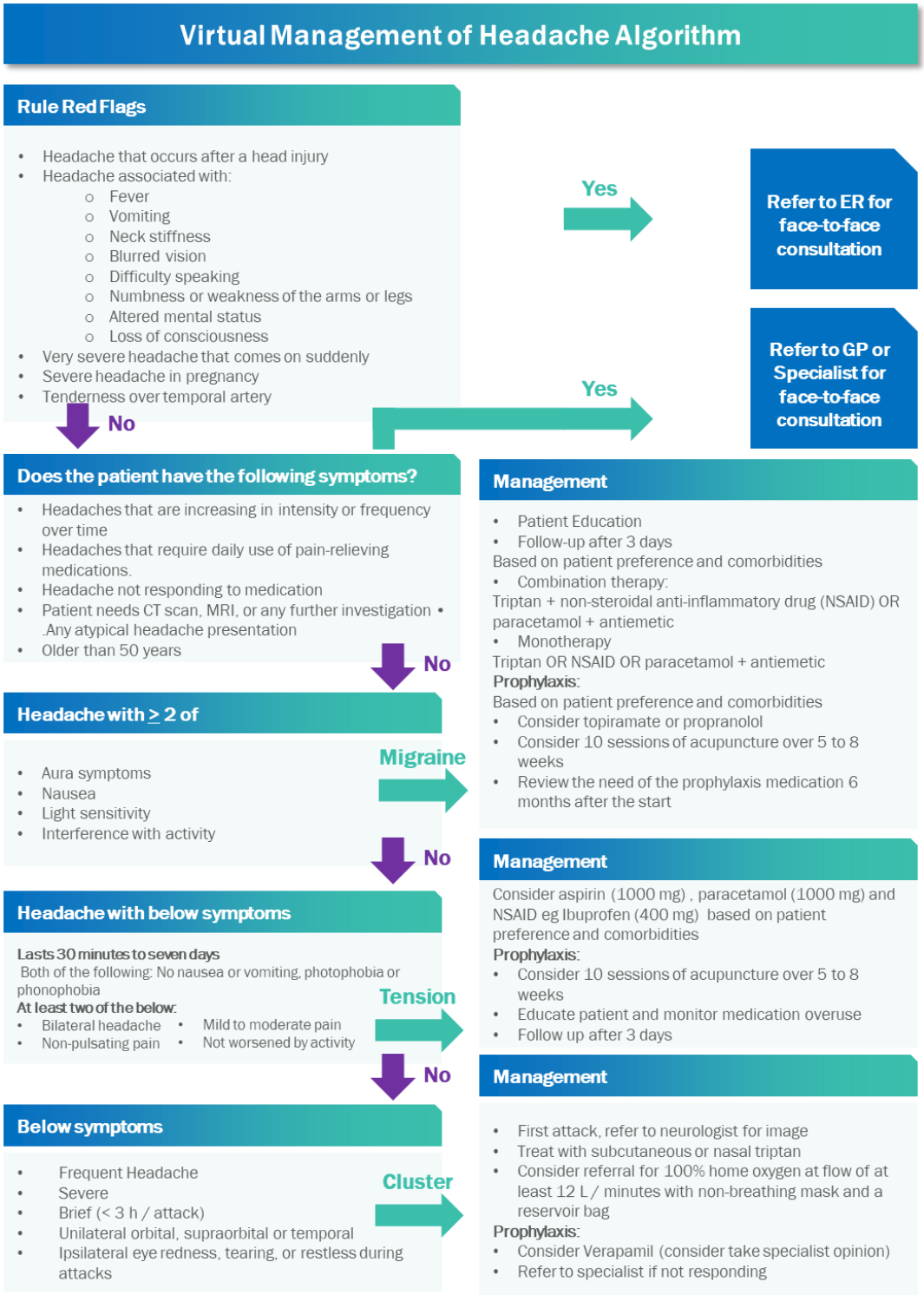
APPENDIX 1 – CHARACTERISTICS OF MIGRAINE, TENSION-TYPE AND CLUSTER HEADACHE SYNDROMES

Symptom	Migraine	Tension-Type	Cluster
Location	Unilateral in 60 to 70%, bi-frontal or global in 30%	Bilateral	Always unilateral, usually begins around the eye or temple
Pain Quality	Pulsing (throbbing)	Pressure or tightness (non-pulsating)	Variable (can be sharp, boring, burning, throbbing or tightening)
Pain intensity	Moderate to severe	Mild to moderate	Severe or very severe
Effect on activities	Aggravated by, or causes avoidance of, routine activities of daily living	Not aggravated by routine activities of daily living	Restlessness or agitation
Duration	4 to 72 hours	30 minutes to 7 days	15 minutes to 3 hours

Associated Symptoms	• Increased sensitivity to light and/or sound or
	• Nausea and/or vomiting
	• Aura symptoms can occur with or without headache and:
	  • are fully reversible
	  • develop over at least 5 minutes
	  • last 5–60 minutes.
	• Typical aura symptoms include visual symptoms such as flickering lights, spots or lines and/or partial loss of vision; sensory symptoms such as numbness and/or
		None	On the same side as the headache:
			• red and/or watery eye
			• nasal congestion and/or runny nose
			• swollen eyelid
			• forehead and facial sweating
			• constricted pupil and/or drooping eyelid

	pins and needles; and/or speech disturbance.					
Frequency of headache	<15 days per month	15 days / month or more for >3 months	<15 days per month	15 days / month or more for >3 months	1 every other day to 8 / day3, with remission > 1 month	1 every other day to 8 / day3, with a continuous remission4 <1 month in a 12-month period
Diagnosis	Episodic migraine (with or without aura)	Chronic migraine (with or without aura)	Episodic tension-type headache	Chronic tension-type headache5	Episodic cluster headache	Chronic cluster headache

APPENDIX 2 – VIRTUAL MANAGEMENT OF HEADACHE IN ADULTS ALGORITHM



APPENDIX 3 – SUMMARY OF MEDICATION USED TO PREVENT MIGRAINE

Drug Class	Drug	Side Effects & Contraindications	Target Dose	Regimen
Beta blocker	Propranolol (alternatively atenolol or metoprolol)	Fatigue, depression, weight gain, bradycardia, impotence, orthostasis. Avoided in COPD / asthma, DM, peripheral vascular disease and those with bradyarrhythmias	80 mg BD (Atenolol 50–200 mg/ day) (Metoprolol 100–200 mg / day)	Start 40 mg bd, titrate up to 160–320 mg daily
Serotonin antagonist	Pizotifen	Drowsiness, weight gain, dry mouth, urinary retention and manufacturers suggest avoiding in people with glaucoma, urinary retention, renal dysfunction and epilepsy	3 mg daily	Start at 0.5 mg OD, increase by 0.5 mg every 1–2 weeks
Antiepileptic	Topiramate	Topiramate may have cognitive, anxiety and depression-provoking effects and may promote weight loss. Rarely renal calculi and glaucoma. Topiramate induces the metabolism of the combined contraceptive pill	100 mg	Start at 25 mg, ⇑25–50 mg every 1–2 weeks

	Valproate	Valproate can cause weight gain, tremor, alopecia and hematological dyscrasias. It can cause hyperammonaemia and is teratogenic. It should be avoided in liver disease (potentially hepatotoxic)	1000 mg	Start at 200 mg OD, ⇑ 200 mg every 2 weeks
Angiotensin based	Lisinopril	Lisinopril may cause fatigue, dry cough, angioedema, orthostasis or confusion. Hyperkalaemia or bone marrow dysfunction should be avoided	20–40 mg OD	Start at 10 mg OD, ⇑ to 20–40 mg
	Candesartan	Candesartan can cause vertigo and hypotension. It should therefore be avoided in individuals with these disorders	8 mg BD	Start 4 mg OD, titrate by 4 mg every week
Calcium channel blocker	Flunarizine	Weight gain, depression and extrapyramidal effects. May cause galactorrhoea in women concomitantly taking the combined contraceptive pill	5–10 mg	5 mg for a month, then 10 mg
Neutriceutical	Magnesium	In hypermagnesaemia, gastrointestinal (GI) effects, arrhythmia and coma are reported	600 mg daily	–
	Riboflavin	Physiologically limited absorption, limiting adverse effects	400 mg	–