Pain management in the pharmacy: headaches

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Abstract
Although headaches can be painful and distressing, the vast majority are not due to life-threatening disorders and can be managed effectively in the pharmacy with over-the-counter (OTC) analgesics. We will review the most common headache types and the over-the-counter analgesics available for their relief.

Introduction
Approximately 90% of headaches are migraine, tension-type or cluster headaches, which require differentiation. Careful questioning is needed to identify headaches that are potentially more serious and require referral.

Headaches are a common medical problem among patients presenting in a pharmacy. However, the choice of a suitable over-the-counter (OTC) analgesic can be overwhelming for patients as there are numerous brands, drug combinations and formulations available. Factors that need to be considered when selecting an analgesic are the cause and severity of pain and characteristics of the drug and the individual patient. Finally, we need to educate patients on safe use of these products.

Cluster headache
A cluster headache comprises a number of headaches occurring one after the other, and causes severe, piercing pain focused at the temple or around the eye. Cluster headaches primarily affect men, typically between the ages of 20-40. They are relatively uncommon, with a prevalence of less than one per cent.

Symptoms and signs
A cluster headache is characterised by unilateral excruciating pain in the ocular, frontal or temporal areas. Pain often radiates to the upper teeth, jaw and neck. Pain is accompanied by one, or more, of the following symptoms occurring on the same side as the headache: ptosis (drooping eyelid), tearing of the eyes, a runny or blocked nose and facial flushing. Attacks usually last anything from 15 minutes up to three hours and often occur at the same time each day. Patients are agitated and restless.

Cluster headaches may be episodic, with attacks occurring once to eight times a day for some weeks, followed by a period of remission for months to years. Some patients have cluster headaches without remission.

Risk factors include smoking, head injury and family history of headache.

Treatment
The treatments of choice for acute cluster headache attacks include oxygen inhalation, subcutaneous triptans, or a combination of both. There is some evidence for the use of ergotamine.
Prevention

All patients require prophylaxis as soon as possible as cluster headaches are severe, frequent and incapacitating. Verapamil is the drug of choice; other options include glucocorticoids, lithium, topirimate and methysergide.

Tension headache

Tension headaches cause mild generalised pain without the incapacity, nausea or photophobia associated with migraines. They are the most prevalent headache in the general population. All ages are susceptible.

Symptoms and signs

Symptoms and signs are of mild-to-moderate intensity and the headache is often described as vice-like. Tension headaches originate in the occipital or frontal region bilaterally, and spread over the entire head. The pain often radiates to the neck muscles and is described as tightness, pressure or a dull ache. Tension headaches can last from 30 minutes to several days, and in severe cases can be continuous. Tension-type headaches that occur > 15 days/month are considered chronic.

Potential triggers include sleep disturbances, poor posture, stress, eye strain and neck pain.

Treatment

Treatment of tension headaches typically involves the use of OTC analgesics, such as oral nonsteroidal anti-inflammatories (NSAIDs) and paracetamol. Based on evidence from a meta-analysis of studies that compared their effectiveness, both are equally favoured. Selection should be based on individual patient characteristics and patient preference.

Combination analgesics containing caffeine or opioids may be useful for more severe pain, and muscle relaxants may be useful in patients with muscle tension. The risk of medication overuse is greater with preparations containing opioids or codeine, and patients should be informed of this and advised to limit the use of such combinations to twice weekly. For severe headaches, prescription analgesics may be taken.

Prevention

Patients with chronic tension-type headaches require prophylactic treatment such as amitriptyline. Behavioural interventions, such as relaxation and stress management techniques, are also effective.

Migraines

Migraines are characterised by episodic severe headaches, with associated symptoms such as light sensitivity, sound sensitivity, nausea and vomiting.

Migraines are the most common form of recurrent moderate to severe headache. The prevalence is 18% for women and 6% for men. Migraines most commonly begin during puberty or young adulthood, and often diminish after the age of 50. Studies show family aggregation of migraine, with approximately 70% of patients having a first-degree relative with a history of migraine.

Symptoms and signs

Migraine attacks are often heralded by a prodrome (a sensation that a migraine is beginning), which may include mood changes, loss of appetite, nausea, or a combination of these symptoms.

An aura precedes an attack in 25% of cases. Auras are temporary neurological disturbances that can affect sensation, balance, muscle co-ordination, speech or vision, and may last minutes to an hour. Frequently, auras comprise visual symptoms such as flashing lights or wavy linear patterns, or numbness or tingling in the fingers of one hand, lips, tongue, or lower face. The headache occurs soon after the aura stops.

The pain of a migraine headache usually begins gradually, intensifies over minutes to hours, and resolves gradually. It is often unilateral, but may be bilateral, most often in the front temporal distribution. The headache is typically dull, deep, and steady when mild to moderate in severity. The pain becomes throbbing or pulsing when severe. A migraine headache usually lasts a few hours, although it can last for 72 hours.

Associated symptoms include nausea (sometimes vomiting), light sensitivity, sound sensitivity, irritability and a general feeling of unwellness. Sufferers prefer to lie quietly in a darkened room.

Potential triggers include:
- Skipping meals;
- Excessive stimuli, such as flashing lights or strong odours;
- Weather changes;
- Sleep deprivation;
- Specific foods: these triggers are generally overstated (e.g. chocolate, cheese, caffeine and alcohol);
- Stress;
- Hormonal factors: fluctuating oestrogen levels are a potent trigger;
- Medication: e.g. oral contraceptives and other hormone therapy.

Treatment

Patients need to be educated about migraines and their treatment, and should be encouraged to participate in managing them themselves. Patients should keep a headache diary to record the number and timing of attacks, possible triggers and response to treatment. Triggers should be eliminated where possible.

Some migraine patients achieve optimal response with mild analgesics including NSAIDs and paracetamol. The patient should be advised to take the maximum licensed, tolerated dose as soon as the symptoms become apparent (i.e. aura or prodrome symptoms) since gastrointestinal motility is slowed during an attack. There are no studies comparing the efficacy of the different NSAIDs, but all may be beneficial in treating...
migraines. Paracetamol may be used in combination with NSAIDs.

Oral solutions are particularly suitable, as peak blood levels of analgesics are achieved 30 minutes after taking a soluble dosage form, whereas it may take up to two hours for peak levels to be reached with a traditional tablet. Opioids should be used as a last resort for severe headaches when other measures are ineffective.

Antiemetics such as cyclizine or domperidone should be recommended if nausea or vomiting are present. They are also effective for pain relief when combined with analgesics.

Patients with severe attacks should be referred as triptans are recommended. Triptans, including sumatriptan, zolmitriptan, naratriptan and rizatriptan, are considered to be “specific” therapies for acute migraine, since in contrast to analgesics, they specifically block the release of vasoactive neuropeptides that trigger migraine pain. Triptans are most effective when taken at the onset of attacks and are available in oral, intranasal and subcutaneous form.

Prevention

Antiepileptics (topiramate), antidepressants (amitriptyline) and antihypertensives (beta blockers) may be used as migraine prophylaxis.

A patient with a headache should be referred to a doctor in the following instances: headache associated with injury; headache unresponsive to OTC analgesics within a day; severe headache of more than a four-hour duration; headache in children under 12 years of age; severe occipital headache (across the back of the head); a headache which is worse in the morning and then improves; associated neck stiffness, drowsiness, vomiting or visual disturbances; or frequent headaches.

Overview of OTC analgesics

Paracetamol is the most widely used antipyretic and analgesic agent and is the drug of choice for the management of mild to moderate pain. It is effective, well-tolerated and safer than NSAIDs. Paracetamol has few drug interactions of any significance. It is largely metabolised by the liver and can cause liver toxicity at high doses; therefore the dose of paracetamol should be reduced in elderly patients with reduced hepatic function, or in patients with a history of alcohol abuse due to an increased risk of toxicity. Paracetamol can be used safely during pregnancy and breastfeeding.

Aspirin and NSAIDs are antipyretic, analgesic and anti-inflammatory. Aspirin is the oldest and best known NSAID and is still widely used in pain management despite the availability of safer alternatives. Ibuprofen, naproxen and diclofenac are
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considered its equivalent therapeutically, although individual response may vary.\textsuperscript{10}

Aspirin and NSAIDs can cause mild gastrointestinal adverse events such as abdominal pain and dyspepsia, and severe events such as peptic ulcers and gastrointestinal bleeding.\textsuperscript{10} Measures such as enteric-coating, or taking the tablets after food may reduce, but do not eliminate these risks.\textsuperscript{10} Enteric-coated preparations are not ideal when rapid pain relief is required and dispersible formulations may provide a faster onset of action. Ibuprofen has the lowest gastrointestinal risk and is recommended as a first-line NSAID.\textsuperscript{4}

The main contraindications to NSAIDs are known hypersensitivity, asthma, renal impairment, severe hepatic impairment, and a history of gastrointestinal bleeding or peptic ulceration.\textsuperscript{6,11} NSAIDs should be used with caution in elderly patients.\textsuperscript{10}

\textbf{Codeine} is an opioid analgesic found in combination products with aspirin, paracetamol or ibuprofen. Constipation is a possible adverse effect and is more likely in elderly patients.\textsuperscript{10} Codeine may cause drowsiness and has the potential for physical and psychological abuse.\textsuperscript{10,11}

\textbf{Caffeine} is included in some analgesic preparations and may enhance the analgesic effect.\textsuperscript{10} Products containing caffeine are best avoided near bedtime because of their stimulant effect. Caffeine has the potential for psychological and physical dependence and caffeine withdrawal may induce headaches.\textsuperscript{4}

\textbf{Doxylamine} is an antihistamine with sedative and relaxing effects which are probably responsible for its usefulness in treating tension headaches.\textsuperscript{10} It can cause drowsiness.

\textbf{Cyclizine} is an antihistamine which is used in migraine preparations where nausea and vomiting is a problem. It may cause sedation.

\textbf{Domperidone} is an antiemetic with the advantage of promoting gastric emptying.\textsuperscript{8} \textbf{Ergotamine} is an older, migraine-specific drug. It is often combined with caffeine and other analgesics, and may be associated with significant side-effects. It may worsen nausea and vomiting.\textsuperscript{7} Vascular occlusion and rebound headaches have been reported with doses exceeding six tablets per 24 hours, or 10 tablets per week.\textsuperscript{7} People with high blood pressure, coronary artery disease, or kidney or liver disease should not use ergotamine.\textsuperscript{6} Ergotamine may, however, be useful for patients with prolonged attacks (greater than 48 hours).\textsuperscript{7}

Many combination analgesics and migraine preparations are available and many pharmacies sell "migraine cocktails" that can include various components to treat migraine attacks. Typically, these are an anti-inflammatory agent, an antiemetic and/or an antihistamine. We need to ensure that safe, "logical" drug combinations are recommended to our patients.

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