

Managing migraine in older patients

Migraine is a common complaint in all age groups, but the diagnosis and treatment in an elderly population require special consideration.

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The International Headache Society (IHS) classifies two major subtypes of migraine. The first is migraine without aura and this is the most common, and usually more disabling, subtype. It is characterised by attacks lasting four to 72 hours that are typically of moderate to severe pain intensity, unilateral, pulsating, aggravated by normal physical activity and associated with nausea and/or photophobia and phonophobia.

Migraine with aura is characterised by reversible focal neurological symptoms that develop over a period of five to 20 minutes and last for less than 60 minutes, followed by headache with the features of migraine without aura. In some cases the headache may lack migrainous features or be absent altogether.¹

Prevalence

Whilst migraine begins to resolve in the 5th and 6th decades of life in around 40% of sufferers, it is still a common complaint in the elderly.² For example, the one-year prevalence of migraine in a Dutch population-based study was

5.63% in men and 20.4% in women aged over 55 years.³ A Swedish population-based study found active migraine in 8.9% of women in the age group between 60 and 64 years, 6.8% between 65 and 69 years and 3.4% between 70 and 74 years.⁴ Comparable results have been found in Denmark,⁵ Canada,⁶ France,⁷ China⁸ and the USA.⁹

In a Brazilian study on headache in elderly patients, migraine was found to be the most frequent type of headache in general. In those whose age at onset of headache was over 60 years old, tension type headache was the most frequent diagnosis. Cervicogenic headache was the most frequent headache diagnosed as being due to a structural cause and older age groups have a higher prevalence of headaches due to structural cause than a younger population.¹⁰

Figure 1 shows migraine prevalence by age and sex in England and Wales 1991/1992.¹¹ Note the dramatic reduction in female prevalence after the menopause. In young and middle aged population studies, the female to male ratio is 3:1, dropping to 2:1 after menopause.

Changing symptoms with increasing age

It is common for the different migraine symptoms to change over time. Patients will describe changes in the intensity of headache, severity of nausea and vomiting, frequency and duration of attacks. During ageing, migraine with aura (MA) attacks may lose the headache element, so that only visual aura symptoms remain. This does not pose a great diagnostic problem, when the patient also suffers or has suffered from MA, but uncertainty arises when these phenomena occur for the first time in a patient without headache. In such a case, extensive search for other (vascular) causes is needed before one can diagnose the phenomena to be migrainous. Only when an extensive work-up is unremarkable, and when the symptoms are typical of migraine aura, may they be called "migrainous." Most patients have visual symptoms alone or in combination, and a typical sign is the gradual build-up and spread over time (Box 1).¹²

New onset of migraine above the age of 50 years is not rare. A Scandinavian epidemiological study

found that 19% of women with migraine without aura (MoA) had an age at onset of over 50 years.¹³ However, there are few patients who develop new-onset migraine after the age of 60 years.¹⁴ When a patient in this age group develops migraine-like headache, an underlying disease such as a mass lesion or giant cell arteritis must always be ruled out. (Box 2 and 3).

Diagnosis

Diagnosis of migraine is largely clinical, based on the history of a severe, disabling, intermittent headache, with well periods between attacks. There are often associated features, including nausea and vomiting, photophobia, phonophobia and osmophobia and vertigo. However, the history may be less typical in an elderly patient. A lower proportion of migraines are reported as unilateral in the elderly population, (38% in 60–70 year olds versus 57% in 20–40 year olds, $p < 0.01$) or with associated symptoms (nausea=75% versus 86%, $p = 0.05$; vomiting=30% versus 54%, $p < 0.05$, photophobia and phonophobia=83% versus 94%, $p < 0.05$). Other symptoms such as paleness ($p = 0.0441$), dry mouth ($p = 0.0093$), and anorexia ($p = 0.05$) were more common in the elderly.¹⁵

Diary cards are invaluable in aiding diagnosis. Samples can be downloaded from The City of London Migraine Clinic website (www.migraineclinic.org.uk). A brief but full neurological examination should be carried out to help exclude secondary headache types (Box 3).¹⁶ This should include assessment of the cranial nerves, and limb tone, power, reflexes and coordination. Fundoscopy is

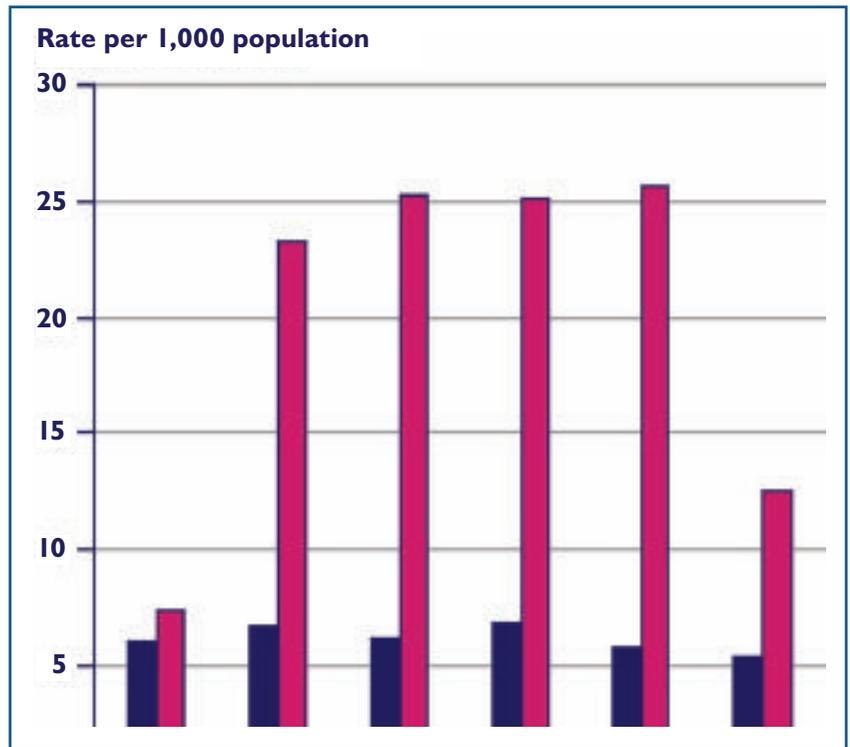


Figure 1. Migraine prevalence by age and sex in England and Wales 1991/1992.¹¹

Box 1: Distinguishing aura from transient ischaemic attack¹²

| | Aura | TIA |
|--------------------------|--|---|
| History | First attack usually in teens/20s | First attack usually in older population |
| Onset and progression | Precedes and resolves before onset of headache | Occurs with or without headache, with no temporal relationship |
| Visual symptoms | Homonymous, positive (bright) scotoma gradually enlarging across visual field into scintillating crescent. 99% of auras. | Monocular, negative (black) scotoma (amaurosis fugax.) |
| Sensory / motor symptoms | Positive (pins & needles) 1/3 of auras, usually in association with visual symptoms. Rarely affects legs | Negative (loss of power) May occur without visual symptoms May include legs |
| Headache | Aura resolves before onset of headache | Up to 25% associated with concurrent headache |

Box 2: Warning features in the history¹⁵

- New onset headache in a patient older than 50 years
- Headache that is new or unexpected in an individual patient
- Thunderclap headache (intense headache with abrupt or “explosive” onset)
- Headache with atypical aura (duration >1 hour or including motor weakness)
- Persistent morning headache with nausea
- Progressive headache, worsening over weeks or longer
- Headache associated with postural change
- New onset headache in a patient with a history of cancer or HIV infection

mandatory to exclude papilloedema and prompt further investigation.

In elderly patients with headache and cognitive impairment, be cautious of diagnosing migraine without further investigation. A 2006 study found that a long history of migraine does not compromise scores on four cognitive tests predictive of memory and executive functioning.¹⁷

Comorbidities

Comorbidities are more common in the older population, and so pose particular challenges in dealing with migraines. Firstly, the symptoms of migraine itself can cause particular problems in the elderly. Migraine is commonly associated with vertiginous symptoms, and in the elderly this can increase the risk of

falls and fractures. Severe vomiting may also cause dehydration.

There are also several diseases that occur more often in association with migraine than expected by their prevalence in the general population.¹⁸ An example is ischaemic stroke, which has been associated with migraine with aura in young women in several case-controlled studies.¹⁹ Extrapolating this, elderly patients with migraine with aura should have their vascular risk factors assessed annually.

There is an association between migraine and depression in all age groups, with a high comorbidity in elderly migraineurs. This can influence the patient’s perception of pain intensity and disability from migraine. It may also influence treatment choices.

Management

It is always important to discuss trigger factors and explain how avoidance of these can significantly reduce the number of attacks. These usually act in combination, building up to a threshold, and triggering the attack. By noting potential triggers every day and keeping them to a minimum, it is possible to reduce the frequency of migraine attacks.

Going too long without eating or drinking are major triggers for migraine. Maintaining stable blood sugar and hydration by eating and drinking regularly throughout the day can be very effective at preventing attacks. Ideally, we recommend a snack every 3–4 hours and at least 1 litre of fluid daily. The early morning migraine attack is often precipitated by an early evening meal and subsequent fall in blood sugar overnight. This can be avoided in many cases,

by having a simple slow release bedtime snack, such as brown toast and peanut butter, or an oatcake and cheese.

Drug management

Comorbidities and polypharmacy become more common in advancing age, making management of migraine more challenging.

The first-line treatment recommended in the BASH guidelines is a combination of domperidone 20–30mg together with soluble aspirin 600–900mg dissolved in a sweet fizzy drink. Domperidone can help nausea, although its main role in migraine is to reverse gastric stasis and aid the absorption of analgesia. This regime can be repeated, if necessary, after two hours and thereafter at a minimum of four hours, to a maximum of four doses in 24 hours. If the patient requires frequent treatment or develops symptoms suggestive of gastric irritation, this strategy will need review.

There are obviously concerns about using such high dose aspirin in an elderly population, and the risks of gastric irritation and possible bleeding must always be borne in mind. A recent Cochrane review on aspirin with or without an antiemetic for acute migraine headaches in adults showed that high dose aspirin was generally well tolerated, with a number needed to harm of 34 (95% CI 18–340,) although this did not specify the risks in an older population.²⁰ 1g of paracetamol can be taken instead of the aspirin if NSAIDs are not tolerated. Codeine containing compounds and opioids should be avoided as they exacerbate the gastric stasis associated with migraine, and are also commonly implicated in medication overuse

headache. In the elderly, their use is also complicated by sedation, cognitive effects, urinary retention and constipation.

If there is no improvement in symptoms after 45 minutes, then a triptan can be taken. Sumatriptan (Imigran) 50–100mg in tablet form is the first choice. The triptans are 5HTP agonists and therefore vasoconstrictors, they must be used with caution in the elderly. Experience of the use of sumatriptan in patients over 65 years of age is limited, and the kinetics in elderly patients have not been sufficiently investigated. They are contraindicated in coronary heart disease, but can be used if cardiac risk factors have been minimised.

Ergotamine is often reserved for those who cannot tolerate triptans, but has powerful vasoconstrictor properties and so must be used with extreme caution in the elderly, who may be more prone to worsening of pre-existing hypertension and to coronary vasoconstriction with associated ischaemia.

Prophylaxis

Preventative treatment should be discussed when the patient finds the level of frequency or severity of their migraines is causing too great an impact on their lives. Prophylaxis is used with the aim of reducing the number of attacks in circumstances when acute therapy, used appropriately, gives inadequate symptom control. The patient is usually the best judge of when to start prophylaxis.

Amitriptyline is commonly prescribed for younger adults, and can be used in the elderly, particularly in those who do not

Box 3: Differential diagnosis

| | |
|----------------------|--|
| Primary headaches: | Tension type headache Cluster headache and other trigeminal autonomic cephalgias |
| Secondary headaches: | Chronic post-traumatic headache, including subdural bleed Vascular disorders, including subarachnoid haemorrhage Temporal arteritis Intracranial hypertension Low cerebrospinal fluid pressure Non-infectious inflammatory disease Intracranial neoplasm Intracranial infection Medication overuse headache Alcohol induced headache Carbon monoxide poisoning Primary angle closure glaucoma Facial pain syndromes, including trigeminal neuralgia. |

tend to sleep well or who may have a tendency towards depressive symptoms. Although side-effects such as dry mouth, blurred vision and sedation are common in the first few weeks of treatment, these typically resolve with continued use. Anti-cholinergic side effects are more common in elderly patients, and they should be vigilant for orthostatic hypotension, confusion and cardiac conduction disturbances. It should be commenced at a dose of 10mg, taken at least two hours before bedtime. If there is no apparent benefit after three weeks, the dose can be increased by 10mg increments every one to two weeks until the most effective tolerated dose is achieved. This is

usually no more than 50mg but in some cases, it may be necessary to increase up to 75mg if partial benefit is achieved with lower doses. If amitriptyline is not tolerated, there may be fewer side effects with nortriptyline, administered in similar doses. Tricyclic antidepressants are contraindicated in those with urinary retention, cardiac dysrhythmias and closed angle glaucoma.

The beta-blockers are useful in elderly patients who have comorbid hypertension, as one medication can be used to aid two complaints. Propranolol is most effective in migraine when taken in a twice daily dosage regime, starting at 20mg bd and titrating upwards. Use may be limited because the

beta blockers influence conduction abnormalities, asthma, glaucoma, depressive symptoms and diabetes.

Topiramate is associated with many side effects even in a younger population, in particular, weight loss, hair loss, renal stones, unmasking of depression and cognitive impairment. In one study using topiramate for the treatment of epilepsy, seemed to be well tolerated in the elderly.

Medication overuse headache

Medication overuse headache can occur in anyone regularly treating the symptoms of headache or migraine more often than 2–3 days a week, and is a pattern commonly seen in patients who have self-treated for several years. Obviously some attacks may need to be treated over four or five consecutive days, so we often review the total number of days treated per month. Migraine diaries are valuable in monitoring this. If a patient is using symptomatic treatment more than 10–15 days a month, the treatment itself may be affecting the frequency of headache. The only way to break this cycle is to stop the drugs, which often aggravates the symptoms for a couple of weeks before improvement is seen. Alternatively, a withdrawal programme with naproxen, with or without amitriptyline, can help. The role of other preventative drugs is limited in medication overuse as their efficacy is reduced in the presence of frequently administered acute medication.

Conclusion

Many elderly patients will have a

long history of migraines and may consult for advice following a change in their usual pattern or severity of symptoms. Migraine is still a common condition in the elderly population, and can be managed by a combination of lifestyle changes and medication. Polypharmacy and multiple comorbidities are potential challenges when treating migraines in the elderly, and medication should be used in the lowest effective dose to minimise side effects and interactions. However, even in this population, effective treatments are available and careful management can improve the quality of life.

Conflict of interest: none declared

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