Migraine in the Elderly: Not Your Typical Headache
By Lindsay Slowiczek, PharmD

Migraines are often considered to be a condition affecting younger or middle-aged patients, during which patients experience episodic, severe headaches, often accompanied by nausea, light sensitivity, or sensory disturbances. However, a recent National Health Interview Survey published in Morbidity and Mortality Weekly Report (2017) found that 3.4% of men and 6.3% of women aged 75 years or older experienced a severe headache or migraine in a given 3 month period. While the frequency and intensity of migraines do decrease with advanced age, between 2-3% of first migraine attacks are reported in patients 50 years or older. A survey which compared migraine characteristics in patients aged 60 to 70 years to patients between 20 and 40 years of age found that a similar proportion of patients sought treatment for migraine attacks, but migraines in the older age group were characterized as less “typical”. Older patients reported migraines with fewer unilateral and associated symptoms, such as photophobia or nausea, but with more frequent neck pain, lacrimation, and rhinorrhea. Elderly patients with chronic headaches or migraines also have a higher risk for depression or functional impairment than younger patients, emphasizing the importance of diagnosis and treatment in this population. While atypical symptom presentation may make correct diagnosis a greater challenge, elderly patients often have better responses to pharmacological treatment. The following newsletter will review migraine prevention recommendations, with particular focus on management in the elderly population.

Common Modifiable Causes of Migraine in the Elderly
There are several modifiable causes of migraines in the elderly that may be addressed to help decrease the frequency and severity of migraine attacks. Lifestyle and nonpharmacological migraine triggers include lack of sleep or excessive sleep, blinding or fluorescent lighting, dietary triggers, physical exercise, and psychological stress. Several medications that have been associated with, or known to aggravate, migraines are listed in Box 1. When appropriate, reducing the dosages of offending agents, or discontinuing their use if no longer needed, may decrease the frequency or severity of migraine attacks. Eliminating environmental or dietary triggers, reducing psychological stress, and optimizing sleep and physical activity patterns may also improve migraine symptomology.
Migraines can also result from overuse of medication intended to treat headaches. The regular use of acute headache medication, defined as 15 or more uses per month for at least 3 months, can cause Medication Overuse Headache (MOH), which often progresses to episodic migraine in elderly patients. In fact, approximately 1-2% of those over the age of 65 suffer from MOH due to chronic overuse of analgesics or other headache remedies. The most common culprits are triptans, barbiturates, caffeine, and other analgesics, with triptans possibly progressing to MOH at a faster rate than other headache medications. When evaluating a patient’s medication regimen, it is important to obtain a thorough history of both prescription and non-prescription medications, in order to rule out MOH or to identify overuse of analgesics. MOH is most successfully treated by discontinuing the overused agent and assessing the need for a migraine prophylactic agent.

### Box 1. Medications that may cause or worsen migraines

- Antibacterials (e.g. trimethoprim/sulfamethoxazole, tetracycline)
- Antihypertensives (e.g. nifedipine, enalapril)
- Antiparkinson drugs (e.g. amantadine, levodopa)
- H2 receptor antagonists (e.g. cimetidine, ranitidine)
- Sedatives (e.g. benzodiazepines, hypnotics)
- Stimulants (e.g. caffeine, methylphenidate)
- Vasodilators (e.g. isosorbide dinitrate, nitroglycerin)

Uncontrolled hypertension can also cause migraines or complicate their treatment. Chronically elevated blood pressure can alter normal and adaptive endothelial responses to changing cerebral blood flow, which can increase the frequency or severity of migraines. A large, population-based study found that elevated diastolic blood pressure was positively correlated with risk of migraine, particularly for women, although elevated systolic blood pressure and pulse were not associated with this increased risk. Uncontrolled hypertension may also be associated with the transformation from episodic to chronic migraine in some patients. Due to the possible association between uncontrolled blood pressure and migraine, a patient’s blood pressure medication regimen should be optimized to rule out hypertension as a cause and minimize the severity or frequency of attacks.

**Prevention Recommendations**

Prevention options and recommendations for elderly patients are similar to those for younger migraineurs, but consideration must be given to clinical scenarios unique to the geriatric population. The American Academy of Neurology (AAN) and the American Headache Society recommend antiepileptic drugs, beta-blockers, antidepressants, and triptans as effective or probably effective migraine prevention options in the general population. It is important to note that triptans are recommended in these scenarios.
guidelines for short term prophylaxis of menstrually-related migraines, only. Selection of a migraine prevention medication for elderly patients should be patient-specific, based on complicating comorbidities, medication tolerability, adverse effect profile, and concomitant medications. Table 1 below outlines the appropriate use and clinical considerations for pharmacological prevention options in elderly patients. A more comprehensive list of drug-drug interactions relevant to this patient population can be found in the July 2017 Long-Term Care Updates newsletter, “Common Drug Interactions in Geriatric Patients”.

Table 1. Migraine prevention recommendations

<table>
<thead>
<tr>
<th>Preventative Agent</th>
<th>Useful with Comorbid Conditions</th>
<th>Cautions or Contraindications</th>
<th>Common Drug-Drug Interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antiepileptic Drugs (AEDs)</strong></td>
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<tr>
<td>Effective: divalproex, valproate, topiramate</td>
<td>Epilepsy, neuropathic pain, trigeminal neuralgia, psychiatric disorders</td>
<td>Divalproex/valproate: hepatic impairment, CNS depression, pancreatitis, weight gain</td>
<td>Other AED’s, ritonavir, carbapenem antibiotics, CNS depressants, warfarin</td>
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<tr>
<td>Topiramate: tremor reduction</td>
<td>Topiramate: weight loss, peripheral paraesthesias, visual disturbances (including narrow-angle glaucoma)</td>
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| **Beta-blockers** | | | |
| Effective: metoprolol, propranolol, timolol | Hypertension | Chronic obstructive pulmonary disease, acute heart failure, bradycardia, hypotension, asthma, diabetes, depression, peripheral vascular disease | Antiarrhythmic agents, calcium channel blockers |
| Probably Effective: atenolol, nadolol | Propranolol: limb essential tremor and head tremor | | |

| **Antidepressants** | | | |
| Probably Effective: amitriptyline, venlafaxine | Mood disorders, depression, generalized anxiety | Amitriptyline: strong recommendation in 2015 Beers Criteria to avoid use due to sedation, anticholinergic effects, and orthostatic hypotension; may also cause confusion, weight gain, increased fall risk | Monoamine oxidase inhibitors; CYP enzyme interactions |
| Amtriptyline: insomnia | Venlafaxine: narrow angle glaucoma, hypertension, serotonin syndrome, weight loss | | |

Definitions: Effective = Established efficacy based on results of 2 or more well-designed randomized controlled trials in the representative population; Probably Effective = based on 1 well-designed randomized controlled trial in the representative population or 2 randomized controlled trials lacking methodological criteria or lacking elements of applicability to population.
The migraine prevention options listed in Table 1 are not all-inclusive; alternative agents described in the AAN’s 2012 guidelines include angiotensin-converting-enzyme inhibitors, angiotensin receptor blockers, gabapentin, and clonidine, among others. However, these agents are listed as “possibly effective” alternative agents, due to inadequate or conflicting evidence to support their use.\textsuperscript{14} While the American Medical Directors Association do not specifically address therapeutic options for migraine prophylaxis, they do recommend pharmacists thoroughly review a patient’s medication regimen to rule out any modifiable migraine causes.\textsuperscript{16}

The prevention of migraines in elderly patients is multifaceted. Successful prophylaxis may require trials of different medications, and adequate dose and duration of therapy for each agent is necessary to assess effectiveness. Modifiable causes of migraine should also be managed to prevent migraines. Next month’s newsletter will discuss acute treatment options, as well as describe pipeline agents for preventing or treating migraines.

References

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