Pharmacologic Treatment of Episodic Migraine Prevention in Adults

Case Presentation: Part I

A 25-year-old female with no significant past medical history is referred to the neurology clinic by her primary care office for headaches.

The patient notes that approximately 6-months ago she started to develop throbbing bifrontal headaches that were associated with nausea and photophobia. When she has these headaches, she must sit in a dark room and try to sleep. After she wakes up, she usually feels better, but on some occasions the headaches persist. For these headaches, she used over-the-counter ibuprofen, which initially helped. At the start, the headaches occurred only once every few weeks and responded to ibuprofen. However, the headaches have progressed to the point where she has them every day. She has been taking the ibuprofen every day and multiple times a day with no relief. More recently, she has had to miss work for these headaches.

There is no associated visual blurring, premonitory aura, diplopia, slurred speech, numbness, or weakness. The headaches do not awaken her from sleep. She does not drink caffeine. She denies any chance that she could be pregnant.

Her past medical history includes an appendectomy in childhood. Otherwise, she denies any chronic illness. There is no history of kidney stones or asthma.

Her only medication is the daily ibuprofen, which she takes multiple times a day. She is not on any oral contraceptives.

She has no known drug allergies.

She does not smoke, drink alcohol, or use illicit substances. She is an elementary school teacher.

She has a strong family history of migraine headaches on her maternal side. There is no history of any other neurologic diseases.

A complete 14-topic review of systems was obtained and was unremarkable.

On physical examination, she is a well-developed and well-nourished female in mild distress. She appears bothered by the light in the examination room. She is afebrile. Her blood pressure is 110/70, pulse is 75, and respiratory rate is 12.
She has no tenderness to palpation over her shoulders, neck, or occiput. No bruits are heard over her neck. There are no murmurs or abnormal heart sounds.

She is alert and oriented to person, place, and date. Registration and 5-minute recall are normal. She follows commands and names and repeats without difficulty. Her speech is fluent.

Cranial nerve testing reveals PERRLA; optic discs are sharp, visual fields are full to confrontation, and extraocular muscles are intact. Facial sensation and strength are normal. Hearing is intact bilaterally to finger rub. Palate, tongue, and uvula are midline. Shoulder shrug strength is normal.

Motor strength is MRC grade 5/5 throughout. Tone is normal in the arms and legs.

Sensory examination shows normal pinprick, temperature, and vibratory and proprioceptive perception in her extremities.

Reflexes are 2/4 in the arms and legs. Plantar responses are flexor bilaterally.

Coordination is normal on finger-nose-finger and heel-knee-shin testing bilaterally.

Her gait is narrow-based and steady.

The patient has had a brain MRI with contrast on disc that her primary care physician ordered. You review the images of this unremarkable study with the patient.

You discuss with the patient that her original headaches were consistent with migraine headaches. However, more recently you suspect her headaches have evolved into daily medication-overuse headaches from excessive abortive analgesia use. You counsel her that her normal neurologic examination and unremarkable imaging are reassuring that there is not a more sinister underlying etiology to these complaints.

As she is having headaches daily, you feel she would benefit from a preventive migraine medication. After reviewing the AAN guideline “Update: Pharmacologic Treatment of Episodic Migraine Prevention in Adults,” you select propranolol, as it has a Level A recommendation. You start the patient on propranolol 80 mg extended release once daily and discuss potential side effects, including dizziness. You have asked her to limit her ibuprofen use. You also discuss nonpharmacologic strategies for migraine prevention, such as good sleep, exercise, and regular meals. Finally, you ask the patient to keep a headache diary to assess therapeutic response and identify common triggers.

**E&M Coding**

The patient is sent to you for a consultation from the primary care physician. The history and physical in this patient are comprehensive. The Medical Decision Making (MDM) would be moderate complexity, so the proper code choice for the first visit would be
99244 for a level 4 outpatient consultation. If it is your understanding that the patient is referred to you for continuous care, the initial visit would be coded as new patient and the proper code would be 99204.

Case Presentation: Part II

The patient returns to the neurology clinic in 3 months. She feels the propranolol helped her headaches, as her headache frequency decreased to twice a week. Furthermore, these migraine headaches responded well to ibuprofen. Unfortunately, she has had problems with dizziness since starting the propranolol. The dizziness has not passed despite the fact she has been on the medication for a few months. She denies any new neurologic symptoms. She has not had to miss any work in the last 3 months. After keeping a diary, she suspects that pepperoni might trigger some of her headaches.

Her medical history and physical examination are unchanged.

You discuss with her that, although you are happy she has improved, it is important to strive for better control of her headaches. As she is having side effects from the propranolol, you do not feel this medication should be increased. You decide to taper her off the propranolol over the course of a week. She will then start topiramate, which also has a Level A recommendation in the AAN guideline. The topiramate will be started at 25 mg daily and titrated over 4 weeks to 50 mg twice a day. You discuss potential side effects, including kidney stones, cognitive changes, and paresthesias. She is encouraged to continue the ibuprofen, which aborts her headaches nicely. She will continue her headache diary.

E&M Coding

The patient is an established patient, so codes 99211 through 99215 would be the choices. In this case, one would choose 99214, as the history is detailed and the MDM is moderate complexity, as the risk of complications from the medications is moderate and the number of diagnoses and/or management options is multiple.

Case Presentation: Part III

The patient returns to the neurology clinic in another 3 months. She is doing very well and has had no headaches in over 1 month. In fact, she has not required any ibuprofen in over a month. She is tolerating the topiramate without difficulty.

Her medical history and physical examination are unchanged.

You discuss that you are happy that she has such good headache control on topiramate. She is encouraged to continue the medication as written and is given refills. You review the previously discussed nonpharmacologic strategies for migraine prevention. Finally, you advise the patient to make you aware if she is currently pregnant or is planning on
becoming pregnant, as this medicine has a Category D pregnancy risk factor. She is scheduled for a routine follow-up in the future.

E&M Coding

Given the patient is doing very well, she would be coded as one of the lower-level established patient codes. On the basis of the information in Part III, one would choose a level 2 or 99212 code. If one spent 15 minutes with the patient, and 7.5 minutes or more were expended discussing the future management of her migraines, including the issue of pregnancy, then one could choose a level 3 visit or 99213 and base the billing on the counseling and coordination of care scheme.

Questions
1. According to the recent AAN evidence-based guideline “Update: Pharmacologic Treatment of Episodic Migraine Prevention in Adults,” there was enough evidence to refute the usefulness of which of the following medications?
   A. Gabapentin
   B. Lamotrigine
   C. Venlafaxine
   D. Sodium valproate
   E. Amitriptyline
   The correct answer is B.

2. Which of the following is true about medication-overuse headache (MOH)?
   A. Preventative treatment never works in the presence of MOH.
   B. MOH never results from using opioids for postoperative pain.
   C. Dihydroergotamine (DHE) frequently causes MOH.
   D. Discontinuing overused medication almost always results in the improvement of MOH.
   E. Triptans produce MOH very quickly.
   The correct answer is E.

3. Which of the following drugs is associated with weight loss?
   A. Valproate
   B. Amitriptyline
   C. Topiramate
   D. Propranolol
   E. Butterbur
   The correct answer is C.

Diagnosis Coding

This is a case study and not a patient record. The case study implies the diagnosis of migraine without aura, intractable, without mention of status migrainosus. However, if the documentation is not specific, then a nonspecific code must be chosen. A nonspecific
code not only poorly represents the level of severity of the patient’s presentation (and thus the level of intensity of physician work), but also distorts any data derived from diagnosis codes in the future.

Assuming the diagnostic statement in the record for Part I is “migraines” and “medication-overuse headaches”:

ICD-9-CM codes:
- 346.90 Migraine, unspecified, without mention of intractable migraine, without mention of status migrainosus
- 339.3 Drug-induced headache, not elsewhere classified
  Medication overuse headache

If the diagnostic statement for Part I is “migraine without aura, intractable” and “medication overuse headaches”:

ICD-9-CM codes:
- 346.11 Migraine without aura, with intractable migraine, so stated, without mention of status migrainosus
- 339.3 Drug-induced headache, not elsewhere classified
  Medication overuse headache

In Part II and Part III, the migraines are no longer intractable. The specificity of the diagnosis is still in question, however. The medication-overuse headache should no longer be coded, as it no longer exists. If the record does not specify the migraine type:

ICD-9-CM code:
- 346.90 Migraine, unspecified, without mention of intractable migraine, without mention of status migrainosus

If the record documents “migraine without aura”:

ICD-9-CM code:
- 346.10 Migraine without aura, without intractable migraine, without status migrainous


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