

PRIMARY HEDACHE DISORDER



**Advance Pharmacology
for Nurse Practitioners**

Case Presentation

Ellis Valentin Torres RN, MSN
San Juan, VAMC
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Patient Presentation

■ **Chief Complain** - "I feel very nauseated, and I am beginning to have one of my headaches".

History of Present Illness

■ Jenny Perez is a 20 y/o woman who is being seen in the neurology clinic for recurrent recurrent severe attacks of a throbbing headache, which is unilateral and temporal in distribution. These headache are unusually preceded by photophobia, nausea, and sometimes vomiting. She describes these headaches as debilitating, as she needs to stop everything and lie down when one begins.

HPI

- She rates the headaches as a 9 or 10 on a scale of 0 to 10, with 10 being the worst possible headache. The intensity and frequency of the headaches have increased over the last 3 to 4 months. In addition, the timing of her headaches has changed. They used to occur during the middle days of her menstrual cycle. They now more commonly occur during the 7 "placebo" days of her BCP regimen.

HPI

- Just prior to her arrival in the clinic, she took two Aleve tablets (naproxene sodium) as the first onset of her headache. She recently applied for medical leave from the police force because of increased headaches that she relates to job stress. Previous abortive therapies including ASA and APAP have only been minimally effective.

PMH

- Significant only for the diagnosis of "classic migraines."
- Previous medical workups have demonstrated no PVD, CVA, CHD, brain tumor, infection or cerebral aneurysm.

FH

- Mother and first cousin suffer from similar headaches.
- Father has NIDDM with mild HTN but otherwise is doing well.

SH

- Graduated from police academy 10 months ago.
- Smokes cigarettes 1/2 pqd, light coffee drinker (one to two cups/day) with nutrasweet, heavy Diet Mountain Dew intake (five to six cans/day), social use of alcohol (three to four beers/month).
- Played in the outfield and starred in the police softball league prior to her worsening of headaches; currently is not playing.

Meds

- Damulen-28, 1 tablet PO QD (began 6 months ago).
- Aleve 220mg, 2 tablets PO at onset of headache and then 1 tablet PO Q6H PRN.
- Multiple Vitamin with Iron 1 tablet PO QD.

H&P

- All - No known drug or food allergies.
- ROS - Day 3 of menstrual cycle, otherwise as noted in HPI.

Physical Exam

- Gen. - WDNW woman in apparent discomfort.
- VS - BP 120/78, P 72, RR 16, T 37.1C; W 59Kg, Ht 165cm.
- HEENT - PERRLA; EOMI; photophobia precluded fundoscopic exam; TMs intact.
- Neck - Supple, no masses, normal thyroid.
- Chest - Good breath sounds bilaterally, clear to auscultation.
- CV - RRR; S1normal; no S3S4.

PE

- Abd - Soft, tender non-distended, no hepatosplenomegally, (+) BS.
- Ext. - Normal ROM, Pulses 2+ throughout, no tremors.
- Neuro - A&O; no dysarthria or aphasia; memory intact; coordination and gait normal. Romberg negative; CN II not evaluated due to photophobia; CN III-XII intact; UE/LE strength 5/5, normal muscle tone; sensory intact; DTRs 2+; Babinski negative bilaterally.

Labs

- Plasma glucose 100 mg/dl.
- Pregnancy test negative.
- Serum chemistry pending.
- UA - Negative.

PRIMARY HEADACHE DISORDER (PHD)

- Primary headache disorder is a syndrome that includes migraine with classic or without common aura tension headache and cluster headache.
- Migraine headache affects as many as 11 million people in the US. It is characterized by recurrent headache often severe, frequently beginning with unilaterally, and visually associated with malaise, nausea and/or vomiting and photophobia.

PHD

- This disorder occurs in 8% to 15% of women and 4% to 6% of men. It is more common in those ages 25 to 55 years, and can occur in young children. The prevalence in woman is highest at 12 to 40 years but remains higher than in men in to older age.
- Hormonal factors account for most of the gender *differences*.
- A positive family history is a common finding and there is a genetic predisposition to the disorder.

PHD

- Classic migraine is a transient visual, motor, sensory, cognitive, or psychic disturbance that usually last minutes.
- The pathophysiology of migraine still incompletely understood. It includes neurologic, vascular, hormonal and neurotransmitter components.

Problem identification.

- 1.a.- What risk factors for migraine are present in this individual?. The risk factors present in this patient are the following:
 - 1) Work stress.
 - 2) Tobacco use.
 - 3) Alcohol use.
 - 4) Caffeine.
 - 5) Beverages with aspartare.
 - 6) Oral contraceptives.
 - 7) Menses.
 - 8) Inadequate sleep.
 - 9) Strenuous exercise.
 - 10) Family history.

Problem identification

- 1.b. What sings and symptoms are consistent with migraine headache?
 - 1) Headache unilateral, temporal in distribution, recurrent, severe and throbbing.
 - 2) Photophobia.
 - 3) Nausea's.
 - 4) Occasion vomiting.
 - 5) Relationship with menstrual cycle.

Desired outcome

- 2- What are the initial and long-term goals of therapy in this case?.
- **Initial goals:**
 - 1) Abort acute attacks.
 - 2) Relive nausea.
- **Long term goal:**
 - 1) Establish measures to prevent acute exacerbation's. Predisposing factors must be eliminated; caffeine, alcohol, smoking, oral contraceptives, etc.
 - 2) Improve quality of live so she can continue with her activities of daily living.

Therapeutic alternatives

- 3.a. Apart from the methods already attempted (ASA, APAP, Naproxene) what are the reasonable first-line pharmacological alternatives for aborting this migraine attack?.

Therapeutic alternatives

- Following the treatment algorism for migraine headache:
 - 1- 5-HT agonist (Imitrex).SQ/Oral/Intranasal.
 - 2- Ergotamine.
 - 3- DHE.
 - 4- Narcotic analgesics; Oral, Intranasal, Parenteral.
 - 5- Combination;
 - A- Midrin (isometheptene/dichloralphenazone/acetaminophen)
 - B- ASA/APAP with codeine or butalbital.
 - C- NSAID with metoclopramide.

Therapeutic alternatives

■ **What changes to her admission drug or chemical usage should be considered to reduce potential trigger factor for migraine?**

- 1- B-bloquers - can decrease the frequency of recurrent vascular headache.
- 2- Tricyclic antidepressant - are effective in preventing migraine and tension headache.
- 3- Divalproex sodium - can reduce the frequency of headache.
- 4- Methysergide - is effective in preventing migraine and cluster headache

Therapeutic alternatives

- 5- Stop smoking.
- 6- Stop aspartame intake.
- 7- Decrease caffeine intake, including sodas with caffeine.
- 8- Stop birth control pills, and try another birth control method.

Therapeutic alternatives

- **What non-drug therapies may be useful adjunctive treatments for acute migraine attacks?**
- Environmental prophylaxis includes avoidance of precipitating foods or food additives (e.g. chocolate, certain cheeses, monosodium glutamate, nitrates), chemicals and situations.
 - Relaxation training should be attempted for sufferers of recurrent stress-induced headache.
 - Other non-drug therapies includes ice pads and rest in dark quiet room

Therapeutic alternatives

- 3-c- What changes to her admission drugs r chemical usage should be considered to reduce potential trigger factors for migraine?
 - 1- B-bloquers - Can decrease the frequency of recurrent vascular headaches.
 - 2- Tricyclic antidepressants - Are effective in preventing migraine and tension headache.
 - 3- Divalproex Sodium - Can reduce the frequency, severity and duration of the headache
 - 4- Methysegide - Is effective in preventing migraine and cluster headache.
 - 5- Stop smoking.
 - 6- Stop aspartame intake.
 - 7- Decrease caffeine intake.
 - 8- Discontinue birth control pills and try another birth control method.

Clinical course

- Ms. Perez was given metoclopramide 10mg IV due to worsening nausea and an episode of emesis. After she obtained relive of her symptoms, she was sent home and told to continue hers NSAIAD PRN and to take metoclopramide 10mg po 15 to 30 minutes prior to her Aleve at the first sign of a headache or its associated symptoms (e.g.. Photophobia,nausea). After four months , recommended lifestyle modifications and a regular exercise program have reduced both the severity and intensity of Ms. Perez's migraine attacks.

Clinical course

- Live stile modifications that Ms. Perez adopted include: (1) She stopped smoking and has now been nicotine-free for six weeks and four days; (2) she quit drinking diet soft drinks and only drinks black coffee during night shifts; (3) with the knowledge of her family physician, she stopped taking PCPs; she has begun utilizing a latex condom and spermicidal foam combination as her method of birth control.

Clinical course

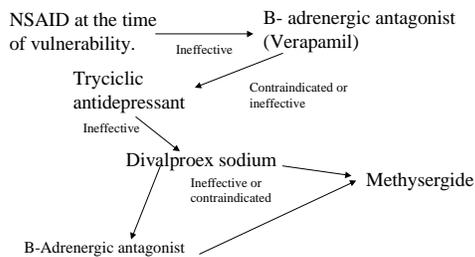
- Ms. Perez states, "together, these changes have helped me better cope with life's little annoyances.". She has also returned to work, but she is still having moderately severe migraines at the rate of two to three per month. These headaches often require her to either miss work completely or to leave work early despite proper use of her abortive therapy. Ms. Perez states that she is not satisfied with the results of the metoclopramide/NSAID therapy and that she has been thinking about Imitrex therapy. Her mother and cousin have each had it in the past and both reported relief with it. Ms. Perez says, "I really want it, but I don't liked needles.

Optimal Plan

- Considering this new information, design a long term pharmacotherapeutic plan for this patient.
 - For acute headache: In view that this patient prefers PO medications instead of IM or SQ administration she can try with oral or intranasal Sumatriptan to help with abortive therapy. Both poor intranasal has the same benefits for the PO, and the same adverse effect, the only thing that changes is the route .
 - I will try with sumastatriptan po since it is the most frequent rout of administration.
 - Start 25mg at sign of first attack, if no relief in 2hrs, then up to 100mg. If the headache return then take additional dose in intervals of 2hrs up to 300mg.

Prophylaxis.

Algorithms for prophylactic management of migraine headache.



Prophylaxis

- For this pt. It is better to use CCB and TCA? - Methysergide is contraindicated in this patient since she would like to start sumatriptan therapy. Sumatriptan use is contraindicated if ergot alkaloids have been administered within the past 24 hours because of vasospastic reaction, CCB or TCA would be a good first choice for this patient
- **Assessment parameters:** What parameters should be assessed regularly to evaluate your Pharmacotherapeutic plan? - 1- Incidence and intensity of headache; 2- Side effects of the medications; 3- efficacy of the medication; 4- adverse reactions.

What information should be provide to the patient regarding the new abortive therapy?

- The new abortive therapy for this pt. Is Imitrex (Sumatriptan succionate) tablets.
- Imitrex provides rapid relief of migraine headache and generally is well tolerated, when appropriate precautions regarding patient selection are employed. The drug also relives manifestations of migraine other than headache, including nausea, vomiting, photophobia and photophobia. It also decreases the need for supplement analgesic therapy and improves functional ability.
- **Purpose:** Imitrex tablets are intended to relive migraine, but not to prevent or reduce the number of attacks. Use of the Imitrex tablets only to that an actual migraine attack.

Side Effects

- **Call your health care provider if you have any of these symptoms;** chest pain, fast or irregular chest palpitations, wheezing or trouble berating; rash or hives, swelling of the face, throat, eyelids or lips.
- **If you have problems with these less serious symptoms talk with your health care provider;** Feeling dizzy, drowsy, or tired; feelings of heat, tingling or numbness; flushing or redness in your face; bad taste in your mouth; muscle pain.
- **Doses:**
- 25mg PO taken with fluids. The maximum single dose is 100mg if a suitable response doe's not occur within 2hrs, a second dose up to 100mg maybe given. If headache returns, additional doses may be taken at 2hrs intervals, not to exceed 300mg pre day.

Side Effects

- Pregnancy risk factor - If you become pregnant or intended to become pregnant notify your physician so that the risk and benefits of the use of the medication during pregnancy can be discussed.
- Sumatriptan succionete PO should be protected from light and stored at 2-30 Oc.

Bibliography

- Andreoli, T.E, Bennett, J.C., Carpenter, C.F., Plum, F., Smith, L.H., (1993) Cecil Essentials of Medicine, (3rd ed.) Philadelphia. W.B. Saunders company. Pp. 767-771.
- Carey, C.F., Lee, H.H., Woeltje, K.F.(1998) The Washington Manual of Medical Therapeutics (29th ed). Philadelphia; Lippincott Williams and Wilkins. Pp. 488-490.
- Mc Cance, K.M., & Huethr, S.E. (1998) Phathophysiology: the biologic basis for disease in adults and children (3rd ed.) St. Louis, Missouri: Mosby. Pp. 537-539.

Bibliography

- Sherman, M.S., Schulman, E.S. (1999) The Pocket Doctor. Mount Kisco, New York. Educational Communications. Pp 114-115.
- Stein, S.F., Kokko, F.P., (2000) Comprehensive Board review in Internal Medicine. New York. Mc. Graw-Hill. Pp 695-698.
- Turkoski, B.B., Lance, B.R, Bonfiglid, M.F., (1999) Drug Information Handbook for Advanced Practical Nursing. Lexi-comp Inc. Hudson. Pp. 1145-1148.
- Wells, B., Dipiro, F., Schuringhammer, T., Hamiltong, C., (1998) Pharmacotherapy Handbook. (2nd. ed.). Stamford, Connecticut:Appleton& Lange. Pp. 594-603.
