

## The Diagnosis and Management of Migraines in Adults

**Angelo Soukovelos\* and Jessica Christie**

*Medical Student, Xavier University School of Medicine, Aruba*

**\*Corresponding Author:** Angelo Soukovelos, Medical Student, Xavier University School of Medicine, Aruba.

**Received:** August 04, 2020; **Published:** August 26, 2020

### Abstract

Migraine is the most common a disabling brain disorder. Chronic migraine, a condition characterized as having at least 15 headache days a month, with at least 8 days of having headaches with migraine presenting features, for more than 3 months. Migraine is a disabling, under diagnosed, and under treated disorder associated with significant disability, poor health related quality of life, and high economic burden. Patients presenting with migraines experience severe headaches and transient neurological symptoms called the aura. The proper diagnosis can be made by identifying the history of the patient and physical examination findings that can differentiate primary headache disorders from secondary headache disorders. As well as clinical features which may include symptoms like blurred vision, nausea, and sensitivity to light and sound, and difficulty in concentrating. There are risk factors associated with migraines including migraine medication overuse, obesity, and stress. However there are preventative measures to overcome these risk factors such as migraine medication overuse, obesity, and stress. Once the proper diagnosis is made, it is key to have the patient on the correct treatment. To avoid inadequate related symptoms such as nausea, vertigo and other possible aggravating side effects of pharmacologic therapies. Recommended pharmacologic agents include non steroidal anti-inflammatory drugs, intranasal butorphanol, ergotamine and its derivatives, and the triptans. The purpose of this article is too discusses how to diagnosis and manage patients that are suffering from migraines.

**Keywords:** *Chronic Migraine; Headache; Medication Overuse Headache; Migraine*

Migraine is a unique common, chronic, and sometimes inherited neurovascular disorder. The patients suffering from this disorder experience severe headaches and transient neurological symptoms called the aura. The headache may last for hours or days. In the United States, an estimated 43 percent and 18 percent of women and men, respectively, are affected by migraine [1]. Most of the patients suffering from migraines experience a temporary disability that affects their daily activities. The symptoms of migraine are distinguished from tension-headache that is commonly associated with the same characteristics but lasts for more than 72 hours [2]. The attack of migraine can start any age and peaks when one attains mid-adolescence.

According to Elrington [2] migraine is the primary disorder of the brain. The form of the neurovascular headache results in the dilation of blood vessels that causes pain. Migraine attacks patients in episodes, and it varies among the patients. Migraine causes dysfunction in the brain stem, which is involved in the sensory of cardiovascular afferents. Aura migraine is characterized by the wave called Oligemia that passes through the cortex at the rate of 2 to 6 mm per minute [3]. The International Classification of Headache Disorder (ICHD-3) classifies headache experienced by people into primary and secondary headaches. The primary headaches include diagnostic criteria

for migraine and its variants with tension-type headache (TTH) and other trigeminal autonomic cephalalgias (TACs) [4]. The secondary headaches involve worsening of the preexisting headaches that are caused by primary disorders.

Moreover, Elrington [2] argues that migraine is classified as migraine with aura and migraine without aura. Migraine with aura has fully reversible sensory, and aura usually begins when the headache has stopped. The standard type of aura with migraine is a visual aura, followed by sensory disturbances [5]. It may also be accompanied by numbness. The prodromal phase of migraine occurs some days before the headache, and the prodrome phase occurs after the end of the headache. The symptoms that are included in the pro and postdrome phases include fatigue, pain, neck stiffness, food craving, repetitive yawning, neck stiffness, and depression. The prodromal symptoms may include symptoms like blurred vision, nausea, and sensitivity to light and sound, and difficulty in concentrating.

Importantly, Elrington [2] expounds a crucial argument that episodic migraines involve the headache that occurs in less than two weeks every month. Chronic migraine involves the headaches that are experienced for more than two weeks every month for more than three months while showing the migraine symptoms [5]. Less than ten percent of the females' experience migraine is associated with menstrual cycles. There are risk factors associated with migraine. The risk factors are migraine medication overuse, obesity and stress. These risk factors call upon the specialists to create awareness for people on how they could manage migraines. The healthcare professions have recommended that people should acquire migraine-preventive medications, do regular exercise, and manage their stress levels. Migraine triggers patients to have different patterns of lifestyle where a patient may be addicted to food, caffeine, use of artificial sweeteners, and delayed or missing meals. The patients are advised to outgo the item that is being triggered for at least one month and the reintroduce being guided by the doctor [5]. Migraine is a lifelong condition. It may disappear when a person is young but later reappear when a person is an adult. Migraine condition tends to be inherited, so if a relative has a condition of migraine, it is more likely that the close family member may have the same condition.

On the research that has been done, 48 percent of people with migraine headaches have been diagnosed and treated for their headaches. Consequently, 29 percent of the patients reported that they were satisfied with the treatment [6]. The treatment that is involved in the treatment of migraine is an acute rescue, lifestyle strategies, alternative remedies, and prophylactic drugs. Most patients are advised to take primary care, but unfortunately, others ignore to consult the doctor when they experience the symptoms [2].

Elrington [2] also explains comprehensively the common cause of migraine is a severe headache. The condition of migraines can be caused by external or internal factors of the person affected. The diagnosis of migraine is initiated by looking at the life history of the patient keenly. Approximately 20 percent of the patients experience an aura before they start experiencing headaches [7]. There are two types of migraine: migraine without aura (MO) and migraine with aura (MA). Most people are diagnosed with migraine without aura, which is more common than migraine with aura. Also, in his article, the MO type of migraine affects approximately 80 percent of the patients [2]. The condition is mostly being associated with nausea, vomiting, and hypersensitive to light and sound [8]. In most cases, pulsating or non-pulsating headache affects the patient at one side of the head or the entire head for 4 to 72 hours. Sometimes the diagnosis is difficult because the condition cannot be differentiated from episodic tension-type headache. Further, migraine with aura is one of the causes of stroke mimics. Among the 1355 patients who suffered from stroke mimics, 36 patients were diagnosed with migraine with aura [9]. The most common auras that the patients suffer include sensory and brain auras and then followed by sight or speech auras. The migraine with aura evolves from one stage to another over time. One aspect of migraine with aura is that one improves while another is reducing in strength. Visual aura is usually diagnosed easily. The auras that affect the sensory organs, movement, cognition, and vestibular function may be challenging to diagnose. Most patients presenting migraine with aura give a long history of migraine without aura. Visual auras vary in forms, and duration that makes the underlying occipital dysfunction vary. Migraine with aura can present language disturbances with visual phenomena. This implies that brain structures can be affected. When migraine aura involves motor weaknesses, the patients are classified as either sporadic or familial hemiplegic migraine [2].

The underlying effects can affect the cortex for several minutes. The transitory effects can cause the aura to affect also any part of the brain because the symptoms may be less clear. It is possible that aura symptoms do not meet the ICHD-3 aura criteria [10]. These observations are what make it unclear on how the visual phenomenon emerges. Paucisymptomatic happening in the brain would lead to the diagnosis of migraine without aura. The cortical spreading depression (CSD) is the self-propagating wave that is most likely involved with the pathophysiology of migraine aura.

In a research study that was done, more than 500 patients suffering from migraine with aura revealed that they had difficulty in distinguishing different colors, faces, and experiencing language difficulties. At least part of these symptoms that are shown may remain apparent until lesions grow in no small degree [11]. In most cases, the aura is preceded by a migraine headache, though the occurrence varies with the pain experienced with the patient. Aura is not always contralateral to pain. Migraine aura without headache is pervasive, especially to middle-aged people. A headache may accompany thromboembolism, but it is differentiated from migraine with aura by the involvement of impairment [2].

The account of the patients is an essential part of history. A diary that a person may keep writing on the accounts that he/she experienced can be helpful because the pain, in most cases, takes a few minutes. It has been reported that approximately 190,000 migraine attacks each day in the UK, with around 100,000 people absent from school or their workplace [12]. When evaluating the symptoms, a person may deny experiencing nausea, but he/she may acknowledge queasiness. Things like light and sound may not be described clearly by the patient because of the quick retreats of the dark and quietness. What the patient does when the migraine has attacked him/her can be evaluated critically. If the patient assumes and carries on with what he/she was doing, then the likelihood of migraine can be affecting him/her.

The patients affected by migraines usually may account for their daily experience of how they are affected by the headache. It is good to document the previous and current treatment of migraine. Many patients are associated with their migraine attacks with a specific lifestyle [13]. The drugs, the dosage, and the duration of the patient take to recover varies. There are those treatments that are effective, and there are those that are ineffective. For example, the overuse of acute medication is the reason why prophylaxis is found to be ineffective [2].

The objective of the examination is to consider structural brain disease that the patient may be suffering from. The examination also provides an opportunity for the patient to be screened on other diseases like hypertension and depression. This is to reassure the patient and the doctor on the exact diagnosis of migraine [12]. The migraine patient does not need to be investigated. The objective of investigating the patient is to make sure that other diseases that have similar symptoms like migraines are excluded.

Migraine disorder is characterized by dysfunction of sensory processing [14]. Every person who is suffering from a painful head should be imaged. This brain scan is usually requested by the patient or recommended by the specialized doctor. From the results of imaging, it has been noted that 18 percent of the women and 6 percent of men have migraines. Three percent of imaged patients have chronic headaches [2]. It is suitable for the patients to have magnetic resonance imaging, which has the best resolution than any other imaging device, and it does not expose the patient to ionizing radiation.

Importantly, Elrington [2] has also expounded effectively the distinct treatments of migraine. A migraine attack starts at the prodromal stage [15]. The commonly recommended remedy for migraines is to take a rest. When people sleep, it is possible to reduce the pain caused by migraines. Some patients who suffer from migraines may opt to sleep first before taking any medication. The patient needs to know the difference of the headache experienced before being administered any drugs.

From the article, it is apparent that Acute Rescue treatment involves analgesics and antiemetic [2]. Antiemetic involves the absorption of the gastric, which helps the addition of prokinetic even if the patient does not experience vomiting or nausea. Also, aspirin may be used

as soon as the patient experiences migraine [16]. Some other patients are administered with non-steroidal anti-inflammatory drugs or paracetamol. Domperidone does not have more side effects than other antiemetic. Patients should not use opiates because they increase gastrointestinal symptoms.

5HT<sub>1</sub> receptor agonists cause vasoconstriction and block pain pathways in the brain stream. This receptor has a shred of good evidence in supporting the treatment of acute migraine. The receptors provide pain relief within a short time of administration. The receptor should be taken when migraine mild pain starts [17]. It is good to use a single large dose, which is more effective than repeating small doses for a long time. It is recommendable for the receptor to be tried at least three attacks before it is rejected for lack of efficacy. If the second dose of the receptor is required, it should be taken at least two hours after the first dose. The side effect of 5HT<sub>1</sub> receptor agonists is the risk of overuse headache, and it should be good to be reviewed regularly [2].

Most patients respond well to triptan treatment because they are more effective than other antiemetic. Triptan is recommended to patients suffering from migraine pain. However, it should not be used during prodromal [2]. When considering rizatriptan and sumatriptan, rizatriptan prescription is valid, but sumatriptan is the most rapid and effective, and it is prescribed through injection [18]. Most physicians find rizatriptan effective to treat migraine because of its lowest mean. Almotriptan is the cheapest of all triptans and useful in reducing the pain of migraine patients. One of the side effects of the triptan is that it is toxic to the cardiac. These side effects are rarely realized during clinical practice. So, it is recommendable for patients who have cardiac complications not to use triptans.

The patients suffering from acute migraine can be prescribed with ergot alkaloids. The ergot alkaloids that are used include ergotamine tartrate and dihydroergotamine mesylate, which can be administered to the patient through injection or as a nasal spray formulation [2]. The oral formulation of the drug can contain caffeine and belladonna alkaloids, which may contribute to the side effect of the treatment. The side effects of the treatment are nausea, vomiting, muscle cramps, having difficulty when swallowing, chest discomfort, nasal congestion, depression, and fatigue. The chest discomfort should be well-evaluated because effects on cardiac function have been reported as ergot vasoconstrictive properties where the heart disease is considered as a contraindication [2].

Other treatments of migraines involve parenteral steroids like dexamethasone and parenteral phenothiazine like chlorpromazine. The recurrence of the migraine condition after treatment is not well-understood [2]. It is argued that triptans access their site of action only when there is migraine pain [5]. Some physicians try to reduce the recurrence of the migraine condition by combining the non-steroidal anti-inflammatory drug with triptan when treating the patient. However, this type of reducing recurrence is not evidence-based. Moreover, there are two other types of treatment known as step care treatment and stratified care treatment. Step care treatment involves administering the treatment with analgesia of an antiemetic by increasing one or more steps towards the triptans [14]. Stratified care treatment involves analgesia and an antiemetic, but the high impact migraine is treated first with a triptan. The physicians recommend that it is appropriate to use antiemetic or analgesia in the early attack of migraine.

Furthermore, Elrington [2] has comprehensively explained how migraine can be managed among the patients. An enjoyable lifestyle that is free from a migraine attack, it is good to avoid hypoglycemia and have a diet that is rich in fiber. The sleeping patterns that are not useful can also be avoided. One can manage migraines by having alternative therapies. It is recommended the patient to have a lot of vitamin B<sub>2</sub> and magnesium [13]. Manipulative treatments seem to be helpful for soft tissue pain. It is suitable for patients to avoid overuse treatments. It is good for the patient to consider daily drug treatment after acute treatment. Their doctors should advise the patients that prophylaxis after treatment of migraine does not suggest treatment failure. Six months after effective treatment of migraine, the patients should consider having phased withdrawal [2].

Migraine is more common in females. Ten percent of the females trigger migraine when they have menstrual cycle period. The estrogen-containing contraceptive pill (OCP) may lead to the improvement of a migraine attack [2]. Intrauterine devices and progesterone

contraceptives do not risk the patient from stroke, so women should have estrogen-containing contraceptives with any form of migraine [15]. The climate that the patient is exposed to and the menopause condition of the patient is usually associated with the worsening of migraines. The right dosage of transdermal hormone is recommended and can be helpful to the affected patient. For expectant mothers, paracetamol is the priority in the line of analgesics. In the first and the second trimester, aspirin, naproxen, and ibuprofen can be used with paracetamol to reduce the pain of migraines. Sumatriptan is recommended to be used throughout pregnancy, but there is no evidence or enough data to support the suggestion [19]. The drugs that have valid evidence and are recommended to use throughout the pregnancy period are prophylaxis and propranolol. Very minimal amitriptyline should be used, but any anti-epileptics should be avoided at all during pregnancy.

Management of migraine to children should be looked into critically because the attacks are shorter, and the pain is unilateral [2]. Using acute rescue medication cannot be sufficient; that is why it is advisable to use ibuprofen. The children should be allowed to rest in a quiet place to manage their migraines. Zolmitriptan may be used in children who are under the age of 12 years [20]. Sumatriptan nasal spray can also be used, but it is unlicensed to be used in children. The preventive measures should focus on the lifestyle of the person and the diet that he/she uses. It is recommended people to have adequate regular sleep and three meals a day rich in fiber.

### Conclusion

A migraine is a unique common, chronic and sometimes inherited neurovascular disorder. The patients suffering from this disorder experience severe headaches and transient neurological symptoms called the aura. The form of the neurovascular headache results in the dilation of blood vessels that causes pain. 5HT<sub>1</sub> receptor agonists cause vasoconstriction and block pain pathways in the brain stream. This receptor has a shred of good evidence in supporting the treatment of acute migraine. The International Classification of Headache Disorder (ICHD-3) classifies headache experienced by people into primary and secondary headaches. The standard type of aura with migraine is a visual aura, followed by sensory disturbances. The prodromal phase of migraine occurs some days before the headache, and the prodrome phase occurs after the end of the headache. Importantly, Elrington expounds a crucial argument that episodic migraines involve the headache that occurs in less than two weeks every month. Less than ten percent of the females' experience migraine is associated with menstrual cycles. On the research that has been done, 48 percent of people with migraine headaches have been diagnosed and treated for their headaches. Consequently, 29 percent of the patients reported that they were satisfied with the treatment. The condition of migraines can be caused by external or internal factors of the person affected. Approximately 20 percent of the patients experience an aura before they start experiencing headaches. The transitory effects can cause the aura to affect also any part of the brain because the symptoms may be less clear. It is possible that aura symptoms do not meet the ICHD-3 aura criteria. At least part of these symptoms that are shown may remain apparent until lesions grow in no small degree. In most cases, the aura is preceded by a migraine headache, though the occurrence varies with the pain experienced with the patient. The account of the patients is an essential part of history. When evaluating the symptoms, a person may deny experiencing nausea, but he/she may acknowledge queasiness. When people sleep, it is possible to reduce the pain caused by migraines. Some patients who suffer from migraines may opt to sleep first before taking any medication. Most patients respond well to triptan treatment because they are more effective than other antiemetic. The patients suffering from acute migraine can be prescribed with ergot alkaloids. It is argued that triptans access their site of action only when there is migraine pain. Moreover, there are two other types of treatment known as step care treatment and stratified care treatment.

### Bibliography

1. Bartleson J and Cutrer FM. "Migraine update". *Minnesota Medicine* (2010).
2. Elrington G. "Migraine: Diagnosis and Management". *Journal of Neurology, Neurosurgery and Psychiatry* 72.2 (2002): 10-15.
3. Goadsby PJ, *et al.* "Migraine-current understanding and treatment". *New England Journal of Medicine* 346.4 (2002): 257-270.

4. Koch T and Oakley CB. "Pediatric migraine: Diagnostic criteria and treatment: Physicians must understand current diagnostic criteria for pediatric migraine and its variants, and exercise their best clinical judgment regarding treatment". *Contemporary Pediatrics* 35.6 (2018): 22-30.
5. Peters GL. "Migraine overview and summary of current and emerging treatment options". *The American Journal of Managed Care* 25 (2019): 23-34.
6. Teixido M and Carey J. "Migraine-More than a Headache". *Otolaryngology-Head and Neck Surgery* 14 (2014): 1-14.
7. Khairmode DV, et al. "Migraine is not just a headache". *Pharma Science Monitor* 9.1 (2018).
8. Hirata K. "Differential diagnosis of chronic headache". *Japan Medical Association Journal* 47.3 (2004): 118-123.
9. Park JJ, et al. "Migraine with Aura as a Stroke Mimic". *Canadian Journal of Neurological Sciences* 47.2 (2020): 242-244.
10. Lipton RB, et al. "Migraine diagnosis and treatment: results from the American Migraine Study II". *Headache: The Journal of Head and Face Pain* 41.7 (2001): 638-645.
11. Charles A. "Advances in the basic and clinical science of migraines". *Annals of Neurology: Official Journal of the American Neurological Association and the Child Neurology Society* 65.5 (2009): 491-498.
12. Steiner TJ, et al. "The prevalence and disability burden of adult migraine in England and their relationships to age, gender, and ethnicity". *Cephalalgia* 23.7 (2003): 519-527.
13. Antonaci F, et al. "A review of current European treatment guidelines for migraine". *The Journal of Headache and Pain* 11.1 (2010): 13-19.
14. Sprenger T and Goadsby PJ. "Migraine pathogenesis and state of pharmacological treatment options". *BMC Medicine* 7.1 (2009): 71.
15. Rawlence E and Jones S. "Migraine management". *Evaluation* 15 (2020): 13.
16. Kirthi V, et al. "Aspirin with or without an antiemetic for acute migraine headaches in adults". *Cochrane Database of Systematic Reviews* 4 (2010).
17. Goadsby PJ. "The 'Act when Mild' study: a step forward in our understanding of early treatment in acute migraine". *Cephalalgia* 28.2 (2008): 36-41.
18. Derry CJ, et al. "Sumatriptan for acute migraine attacks in adults-overview of Cochrane reviews". *Cochrane Database of Systematic Reviews* 5 (2014).
19. Harris P, et al. "A systematic review of cognitive behavioral therapy for the management of headaches and migraines in adults". *British Journal of Pain* 9.4 (2015): 213-224.
20. Rapoport AM, et al. "Optimizing the dose of zolmitriptan for the acute treatment of migraine: A multicenter, double-blind, placebo-controlled, dose range-finding study". *Neurology* 49.5 (1997): 1210-1218.

### Volume 2 Issue 9 September 2020

©All rights reserved by Angelo Soukovelos and Jessica Christie.