

A reviewed article on migraine: its types, indications & preventions

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Abstract - Migraine is a common condition that primarily impacts grownups, disables both the central and peripheral nervous systems, and disproportionately affects women. The most pronounced indication is a trembling, pulsing pain on a particular side of the brain, although there are additional signs as well. Typically, a diagnosis is made largely on the clinical examination and history rather than imaging. There are several forms of migraine depending on the frequency of the headaches and if an aura is present. Depending on how many headache days a patient had, they either have a chronic migraine or an episodic migraine. Both the migraine itself and its occurrence can be treated, as can migraine prevention. Even though the understanding of pathophysiology is rapidly expanding, leading to the creation of novel treatments, there is still a need for evidence-based migraine treatments, particularly in developing countries. The route physiology, its types, and an evidence-based strategy to management are reviewed in this article.

Keywords: Migraine, Headache, episodic migraine, Chronic Migraine, neurological disorder pathophysiology

I. INTRODUCTION

The most frequent neural condition observed in primary health care is migraine headaches. In accordance with the most recent Global Burden of Disease study steiner et al.,(2019), migraines appear to be the most prevalent illness among younger women and one of the leading contributors to impairment worldwide. Chronic headaches impact 2% of the world's human population, affecting 6% of males and 18% of females... For the patients, their families, and society as a whole, it is a tremendously taxing illness Goadsby (2017). These severe headaches are so incapacitating that the person takes a lot of sick days. While some people may control their migraine attacks with medicine, others must suffer through the assault. Migraine is occasionally confused with other types of pain in the head, especially a tension headache. It's possible that migraine sufferers won't obtain the correct prognosis, sufficient therapy, or supportive care from their loved ones, circle of friends, or place of employment. Just a small percentage of migraineurs primarily treat themselves with acute or abortive medicines. The Latin term "hemicrania," which means "half" (hemi) and "skull" (crania), is where the British word "migraine" originates. Galenus of Pergamum used this phrase to express the agony a migraine sufferer experiences on a particular side of the brain. Additionally, he asserted that the skull's meninges and blood vessels were to blame for the pain. Additionally, he said that vomiting suggested a link between the stomach and the brain.

II. BACKGROUND

One of the oldest diseases affecting humans is migraine. Since the third century BC, Egyptian pharmacology has provided in-depth explanations of migraines, pain in the nerves and severe pain that occurs suddenly. The ancient Egyptians recorded some of the earliest cases of strong headaches as early as 1200 B.C. Hippocrates further discussed the visual disturbances, or aura, that may accompany a migraine, such as flashing lights or fuzzy vision, in his writings about 400 B.C. Hippocrates described a dazzling light in one's right eye, then a terrible headache that ultimately spread to the entire area. He also mentioned the satisfaction that patients felt when receiving treatment for problems like headaches and migraines, nerve pain, and other ailments in ancient Egyptian therapy (dating back to three thousand BC). A doctor of Andalusian heritage named Abulcasis, also known as Abu El Qasim, suggested that the usual partial migraines may be healed by applying irons that are hot to the head or by applying cloves of garlic directly to the area through a small hole in the temple. Bloodletting and perhaps witchcraft were among unsuccessful migraine treatments in the middle ages Ameri p et al., (2022).

Types of Migraine: Approximately 150 distinct types of headaches are present and they are often divided into two distinct groups: primary headaches and secondary headaches. Since a migraine is a main headache, it cannot be attributed to another illness. There is no blood test or imaging procedure necessary to identify a primary headache. Another medical condition may be the cause of a subsequent headache. Two of the most widespread kinds are migraines without aura and migraines with aura. Some people possess both varieties. Many people suffer from many migraine types. Here are some of them:

Migraine without aura (MO): This headache is common. The majority of migraineurs lack an aura. An bout of incapacitating headache ranging from a few hours and a couple of days, together with the presence of gastrointestinal symptoms or increased special senses, may indicate the existence of MO. People with MO have experienced at least five episodes with the following features, according to the International Headache Society: The following symptoms might manifest if ignored: photophobia, phonophobia, (7) unilateral throbbing pain of a moderate to severe intensity and nausea.

Migraine with aura: Earlier names for this type of migraine were typical migraine, tough migraine, and hemiplegic migraine. One-quarter of migraine patients get migraines with auras. The International Headache Society states that a person needs to have a minimum of a couple headache attacks with visual issues, problems with sensations like insensibility, shivering, or drowsiness, and primarily unilateral paraesthesia that gradually expands to the facial or limb.

Chronic migraines: Because it displayed traits of both migraine and tension headaches, chronic migraine was once classified as combo or blended headache. It can be brought on by excessive drug usage and is also referred to as a powerful migraine. Chronic migraine sufferers experience an intense headache related to migraines over a period of fifteen days each month for a duration of three months or longer Neural et al., (2002). With or without aura, more than eight of those headaches are migraines; people who encounter frequent migraines are more likely to notice the following signs and symptoms: Comorbidities include chronic headaches, sadness, and constant discomfort like arthritis.

Acute migraine: Migraines that are not considered chronic are referred to as acute migraines. Episodic migraine is another name for this variation. In excess of fourteen days a month can pass without a headache for those who have episodic migraines. So, compared to people with chronic migraines, individuals with episodic migraines have fewer headaches per month.

Vestibular migraine: Vertigo caused by a megrim is the standard name for vestibular migraine. It may be more challenging to diagnose a vestibular migraine since the feeling is usually described as "to-and-fro" Russel et al., (1996). About 40% of migraineurs experience migrainous vertigo. Either dizziness or balance issues are brought on by these symptoms. All ages, even youngsters, are susceptible to vestibular migraines.

Optical migraine: Optical migraine is also known as vision migraine, ophthalmic migraine, corneal migraine, shortsighted migraine, and retinal migraine. This smaller-scale migraine aura exclusively impacts one eye, in contrast to other sight auras. Possible symptoms include scintillations, scotoma, and visual loss in one eye Connel et al (2017).

Menstrual migraine: A maximum of sixty percent of women who get headache of any kind are impacted by menstrual migraines. They may turn up aura-free or with a single. Along with occurring during ovulation, it can also occur prior to during or following menstruation. Menstrual migraines are more painful and cause more nausea than headaches unrelated to the menstrual cycle, according to research.

Acephalgic migraine or Silent headache: Acephalgic migraine is also known as silent. When a person has an aura but no headache, they are said to have a silent sick headache. People who get pains over their golden years of 40 frequently develop a specific kind of headache. The aura may arise with indications spanning over a period of time and moving from one symptom to the other in this sort of migraine. Following visual symptoms, patients might experience numbness, trouble with speech, lethargy and inability to operate a part of their own body on a regular basis

Hormonal migraines: Females are more likely than males to get discomfort, especially migraines, notably during the adolescence years. The latest study has discovered variances in the signs of headaches in addition to the structure of the central nervous system. Massumi et al., (2016) Hormonal migraine additionally referred to as menstrual migraines, can be triggered by female hormones, most notably estrogen. Migraines can occur during the following times: ovulation, pregnancy along with that also in menopause and hormone therapy.

Abdominal Migraine: Gastrointestinal migraine (AM) is a prevalent root of ongoing and recurrent indigestion in children. It is distinguished by episodes of mild to extreme stomach discomfort. Gastric migraine often affects youngsters in particular. The average age of assessment is between 3 and 10 years, with a highest rate of 7 years Mani et al., (2014). The following effects typically last 1 to 72 hours. These are dizziness, puking, rinsing. Indications associated with this migraine type among children might involve the following: attention-deficient difficulties, clumsy and retarded growth.

Stress migraine: Nearly 70% of people get migraine attacks as a result of stress Theler et al., (2009). The levels of stress are high among migraine sufferers, particularly those who suffer from recurrent frequent migraines. Endogenous (such as hormone) and exogenous (including physiological) stresses all contribute to the disease's impact. Mental stresses include psychological or physical trauma (for instance, assault, especially during adolescence), as well as economic or social pressure. chyn et al., (1999). There are

several headaches triggered by stress. These kinds of migraines are additionally referred to as tension headaches or common headaches. Additional signs that certain people encounter include perspiration, decreased focus, experiencing extremely hot or chilly, belly pain and diarrhea.

III. PREVENTION

Despite the fact that there are more therapy choices for headaches and migraines compared to ever before, avoiding a headache is often far simpler than treating one of them. Listed below are some precautionary measurements:

Avoid loud noises and bright lights: Migraines are frequently brought on by loud noises, lights that flash, driving after dark, watching a movie, going to a packed club, or being in direct sunlight are few examples. Adjust the brightness levels on digital devices and take pauses from a computer or television screen to give the eyes some rest. Keep a vigilant eye out for any visual or auditory distractions.

Pay attention to food choices: Caffeine and alcohol-containing foods and beverages, particularly red wine and champagne, are prominent triggers. Therefore, individuals should reduce their daily intake to a minimum or, if necessary, avoid them completely.

By keeping a record, one can easily identify particular megrim reasons. For instance, things a person can write includes as follow: Eating and drinking habits, sports routine and schedule, the weather, any intense emotions, medications and any side effects they may have, and the frequency and intensity of headaches. All of this information can help to identify a pattern in migraine episodes and helps to avoid developing one.

Beware of hormonal changes: When it comes to migraines, hormones are quite important. Many women typically report experiencing more migraine headaches during or just before their periods. Women should concentrate more on their food and exercise regimens during this time. This lessens the symptoms even before they appear. In accordance to the Mayo Clinic, pills for contraception and replacement therapy for hormones (HRT) may make migraines more frequent and severe.

Take supplements: Even though there are both drug-free and drug-assisted treatments for migraines, eating the appropriate meals is still vital. Some vitamins and plants may be able to lessen migraines. Although it has been shown that a magnesium deficiency leads to the development of migraine episodes, taking a daily magnesium supplement may help reduce migraine attacks. Consult your doctor about any over-the-counter drugs and natural therapies that might lessen the symptoms.

Be aware of the weather: Changes in the weather may also affect how frequently you have migraines. Headaches can be triggered by hot, humid weather as well as by rainy days. A person can reduce the amount of time spend in particular headache-inducing weather if it becomes uncomfortable.

Eat and sleep on a regular schedule: Missing meals or going on a fast might result in migraine headaches. Dehydration and hunger are two factors that might trigger migraines. Get at least eight hours of sleep each night because getting less than that might make conditions worse. Prevent trying to make up for lost sleep by sleeping for a long time since headaches can still come from getting excessive amounts of sleep.

Avoid stress: Even while nobody can control worrisome situations all the time, they can control how they react to them. Migraines are commonly brought on by stressful conditions. Using relaxing techniques like yoga, meditation, and biofeedback help reduce stress levels.

Choose relaxing exercises: An essential component of a healthy lifestyle is regular exercise. However, vigorous exercise, like lifting weights, might cause headaches. Pay close attention to how the body reacts to different activities. Make sure to choose stress-relieving exercises that won't put too much stress on the body, such as Tai Chi, gentle aerobics, or yoga. Anti-inflammatory medication used before working out may help reduce discomfort.

Plan ahead: Planning ahead and becoming aware of certain triggers are crucial steps in managing migraines. Anyone can prevent the most severe symptoms by detecting them early.

Diagnosis: If a patient has migraines or a family history of migraines, a headache expert will probably identify migraines on the basis of the patient's medical background, symptoms, and the findings of a physical and neurological examination. If the issue is uncommon, complicated, or suddenly worsens, investigations to figure out additional sources of the discomfort may include the following:

MRI: An MRI scan uses radio waves and a strong magnetic field to produce detailed images of the brain's structures and blood vessels. MRI scans help doctors identify cancers, strokes, brain haemorrhages, sickness, and other diseases of the brain.

CT scan: Using a series of X-rays, a CT scan creates very detailed images of the central nervous system. This helps in the identification of malignancies, illnesses, injuries to the brain, cerebral haemorrhage, and other possible medical disorders that could be causing pain in the head.

IV. MEDICAL CARE

Treatment for migraines aims to reduce symptoms and protect against attacks in the future. There are numerous drugs available for treating migraines. Prophylactic drugs are used regularly to lessen the duration or severity of migraine attacks, while painkillers sometimes known as acute or prophylactic therapies are given during migraine attacks to cease symptoms.

Medications for relief:

The best results are obtained when migraine drugs are used as soon as the early symptoms and indications of a migraine appear. The following medicines are capable of helping to cure it:

Beta-blockers: The most popular and efficient first-line therapy for migraine prevention is propranolol. Starting at 40 mg, the maximum daily dosage is 320 mg. For therapeutic advantages to become apparent at a sufficient dose, it might take up to 12 weeks Modi et al.,(2006).

Anticonvulsants: Anticonvulsant drugs such as sodium valproate and depakote are both used to prevent migraines. These medicines are considered the primary migraine preventive medications. They are extremely beneficial for long-lasting and unusual migraines Freitag et al., (2002).

Amitriptyline: It has been proven that amitriptyline is helpful in preventing migraines. When treating mixed migraine-tension headaches, it could be more beneficial than propranolol. Compared to beta-blockers, the impact of therapy is often noticed in as little as 4 weeks. Each day's dose varies between 25 and 150 mg.

NSAIDs often known as non-steroidal anti-inflammatory drugs, are prescribed for the relief of menstrual migraines. Prior to the expected commencement of the menstrual period, begin medication and maintain it throughout the initial several days.

Calcitonin Gene-related Peptide Therapy: In May 2018, the FDA granted Erenumab approval for both the treatment and mitigation of migraines. A monoclonal antibody that links to the peptide associated with the calcitonin gene receptor facilitates the spreading of migraine pain. Subcutaneous injections are used to provide it on a monthly basis. Coder et al., (2012)

V. LIFESTYLE AND HOME REMEDIES

- a. When migraine symptoms first start to occur, consider retreating to a quiet, dark area. While you are sleeping, relax or do something else.
- b. Create an eating and sleeping regimen.
- c. Steer clear of sleeping excessively or too little.
- d. Establish and follow a regular plan for waking and sleeping.
- e. Make an effort to eat your suppers at the exact same time every day.
- f. Drink a lot of water.
- g. Drinking enough of water, especially, may be helpful.

Complementary medications

Chronic migraine headache could benefit from unconventional treatments.

- **Acupressure:** Acupuncture has shown promise in clinical studies as a treatment for headache discomfort. In this procedure, a professional places several small, biodegradable syringes at predetermined spots into various parts of the epidermis.
- **Biofeedback:** It seems that biofeedback can effectively reduce migraine discomfort. This relaxation approach teaches us how to track and manage certain bodily responses linked to anxiety, for instance muscular tightness.
- **Cognitive behavioral therapy:** Several sufferers of migraines may find relief with cognitive behavioral therapy. People will learn how their actions and ideas impact and how they experience pain via this sort of counseling.
- **Herbs, vitamins and minerals:** Herbs like *Tanacetum parthenium L* and umbrella plant may help avoid headache related to migraine or lower their severity, according to some research. Due of safety concerns, using butterbur is not suggested.

VI. CONCLUSION

To recapitulate, recurrent migraine attacks include intense throbbing pain, nausea, motion sickness, and intolerance to light or noise for the sufferer. It is unclear exactly what biological process causes migraine headaches. While many signs are connected to straightforward migraine attacks, uncommon indications may point to a medical issue that has to be treated right away. Monitoring the effects and receiving biofeedback training may help control the pain of migraine attacks. Additionally, some individuals benefit from extra therapies

such as blocking nerves. Finding the best migraine headache therapy may be aided by having a conversation with a physician or a medical expert.

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