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Migraine: Causes, Symptoms, and Management

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Abstract: *Migraine, a neurological disorder that results in a chronic headache, is the second most common cause of years of disability worldwide. Globally, this illness affects more than a billion people. There are several negative effects as a result of its widespread prevalence and concurrent impairment. Numerous behavioral, ecological, and genetic factors can cause migraines. There are several different types of migraines, the most prevalent of which is migraine without aura. This article's goals are to identify the origins of migraine headaches, review the correct migraine diagnosis, and outline the various migraine headache management options. There are numerous migraine remedies on the market. Migraines are a neurological condition that can be inherited in some people and are one of the many different types The mainstays of treatment include drugs like analgesics, triptans, ergot derivatives, and recently developed biologics. Since many aspects of daily life can cause migraines, lifestyle changes are also crucial. If enough consideration, care, medication, and guidance are provided, migraines can be effectively managed. Patients should not ignore their symptoms and should consult a doctor as soon as possible so that the proper course of action can be taken. headaches. It Analgesics, triptans, ergot derivatives, and recently developed biologics are some of the mainstays of treatment. Lifestyle changes are also essential because numerous aspects of daily life can trigger migraines. This paper provides a comprehensive overview of migraines, a prevalent neurological disorder that affects millions of people worldwide. It discusses the causes, symptoms, and management strategies for migraines, shedding light on the impact they have on individuals' quality of life and society as a whole.*

Keywords: Migraine, headache, neurological disorder, triggers, symptoms, pathophysiology, diagnosis, management, quality of life

I. INTRODUCTION

Migraine is a neurological disorder characterized by recurrent, throbbing headaches that often occur on one side of the head. These headaches can be extremely painful and are typically accompanied by other symptoms such as nausea, vomiting, and sensitivity to light and sound. Migraines can significantly impact a person's daily life and may last for hours or even days. They are often preceded by warning signs known as "auras," which can include visual disturbances or other sensory changes. Migraine is a complex condition with various triggers and treatment options, and it affects millions of people worldwide. Migraines can be effectively treated if enough thought, care, medication, and direction are given. Patients should seek medical attention as soon as they can in order to determine the best course of action. Patients should not ignore their symptoms.Migraines are a complex and debilitating neurological disorder that affects a substantial portion of the global population. This paper aims to explore the various aspects of migraines, from their etiology and clinical manifestations to their management and societal implications.

II. RESEARCH METHODOLOGY

This paper is based on a comprehensive review of existing literature, including scientific studies, medical journals, and authoritative sources. The information is synthesized to provide a holistic understanding of migraines, their causes, symptoms, and management. No original research was conducted for this paper.

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Description:

Types of Migraine

There are two main types of migraines. The first is migraine with aura, also referred to as a classical migraine, in which sensory and other neurological symptoms appear before a migraine attack . The second type, formerly known as common migraine, is migraine without aura. It is the most typical kind. One of the subtypes is chronic migraine, also referred to as high-frequency episodic migraine, which causes 15 headache days per month, eight of which are accompanied by migraine-like symptoms and last for more than three months .

Other uncommon types include status migrainosus, hemiplegic migraine, ocular migraine, abdominal migraine, and migraine without a headache (silent migraine). A migraine that lasts longer than three days is referred to as status migrainosus. A dazzling light sensation or other visual changes (aura), nausea and vomiting, and a lack of clarity of thought are symptoms. The patient may become dehydrated because of the prolonged vomiting because the condition lasts for three days. In addition, the patient may experience insomnia from their severe pain. Hemiplegic migraine is a rare condition in which a migraine headache is accompanied by hemiplegia. A migraine with an aura is said to be experienced by those who are affected. Hereditary and sporadic hemiplegic migraines are the two varieties.

Phases of migraines:

A typical migraine attack can have four phases, each lasting anywhere from six hours to a whopping 72 hours. Not all migraine patients experience all of these phases.

The prodromal stage: Some non-painful symptoms, such as yawning, mood swings, difficulty focusing, neck pain, exhaustion, thirst, and an increased frequency of urination, start to show up hours or days before the headache.

Headache: It can last for hours and is also referred to as the attack phase. During this time, the patient wants to rest quietly and finds it difficult to go about their daily business. The supraorbital region, particularly the area around the eyebrows, is where the pain typically begins. From there, it radiates to the temporal region on one side of the head. Some patients also express pain in their neck's cervical region.Migraine is characterized by throbbing or pulsing pain. Poor odors, bright lights, loud noises, stress, and gastrointestinal issues like constipation all make the pain worse.

after- Rome stage: The post-migraine phase is another name for this stage. Patients with migraines frequently compare the latter stages of a migraine to the aftermath of an alcoholic binge. It might be even worse than a migraine attack. The patient reports feeling drained, worn out, and exhausted. The patient reports mild headaches, neck pain, difficulty concentrating, intestinal issues, feeling dehydrated, and mood swings.

A flash of light or intense lighting, loud sounds, foul odors, excessive or insufficient sleep, changes in the environment or the climate, overexertion (too much physical activity), caffeine withdrawal, smoking and drinking alcohol, skipping meals, and taking too many migraine medications are among the triggers for migraines. 12–60% of patients report having food triggers. Numerous Tyramine, which is naturally present in foods like chocolate, liquors, cheese products, processed meat, and other foods, has been shown in numerous studies to cause migraines in some individuals. Monosodium glutamate (MSG) is also frequently mentioned as a migraine trigger.

Migraines' root cause:

People with more sensitive nervous systems than others experience migraines. These individuals have brain nerve cells that are easily stimulated, resulting in electrical activity. Multiple brain functions, including vision, sensation, balance, muscle coordination, and speech, are momentarily disrupted as electrical activity spreads throughout the brain. The aura—the symptoms that appear before a headache—is brought on by these disturbances.

Trigeminal nerve stimulation causes the fifth cranial nerve, which causes the headache. The brain receives impulses from the eyes, scalp, forehead, upper eyelids, mouth, and jaw, including pain impulses. The brain's blood vessels (cerebral blood vessels) and the tissue layers that cover the brain (meninges) may both experience painful inflammation when a nerve is stimulated. The headache, nausea, vomiting, and sensitivity to light and sound are all symptoms of inflammation.

The primary female hormone, estrogen, appears to cause migraines, which may help to explain why women are more likely than men to experience migraines. Probably, an increase or fluctuation in estrogen levels can cause migraines. Girls experience migraines much more frequently than boys do during puberty (when estrogen levels rise). Some

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females experience migraines right before, during, or right after their periods. In the final trimester of pregnancy, when estrogen levels are relatively stable, migraines frequently occur less frequently and become less severe, and they worsen after childbirth, when estrogen levels drop quickly. When menopause (and fluctuating estrogen levels) approaches, migraines are particularly challenging to manage.

In women who experience migraines with an aura, estrogen-containing oral contraceptives and estrogen therapy may exacerbate migraines and raise the risk of stroke.

The following are some additional triggers:

sleep deprivation, including insomnia

variations in the weather, especially in the barometric pressure

a red wine

specific foods

Hunger (as in the case of skipping meals)

excessive sensory stimulation, such as that caused by loud noises or flashing lights

Stress

Although many foods have been linked to migraines, it is unclear whether these foods actually cause migraines. These foods consist ofAged cheeses, soy products, fava beans, hard sausages, smoked or dried fish, and some nuts are examples of foods that contain tyramine.

nitrate-containing foods like hot dogs and lunch meats

foods flavored with MSG (monosodium glutamate) MSG (monosodium glutamate), a flavor enhancer present in fast food, broths, seasonings, and spices, is present in certain foods.

Caffeine, including the caffeine found in chocolate. Each person has a different set of trigger foods.

Sometimes, head injuries, neck pain, or a condition affecting the jaw joint (temporomandibular joint disorder) cause or aggravate migraines.

A rare subtype of migraine called familial hemiplegic migraine results in weakness on one side of the body. Genetic flaws on chromosomes 1, 2, or 19 are linked to it. Research is being done on the part of genes in the more prevalent types of migraine.

Diagnosis:

Migraine headaches are primarily diagnosed clinically. Along with a thorough examination of the central nervous system, a thorough history must be taken. All symptoms must be fully described by the patient. The history is crucial in the diagnosis of migraine, and the main objective of the examination is to look for any additional conditions that might exacerbate a pre-existing propensity for migraine. The history is always sufficient for making a migraine diagnosis if the right questions are asked. The patient typically reports a history of a unilateral, pulsatile headache that starts in the supraorbital area and progresses to the temporal area, along with nausea or vomiting and sensitivity to bright light or loud noises.

The patient consistently reports having these symptoms quite often for Patients are frequently demoralized and even frustrated as a result of the failure of numerous earlier treatments. Due to a routine, hastily gathered, uninteresting history, headache treatments frequently fail. Time is one of the essential conditions.

The doctor needs to be understanding of the patient's suffering and sympathetic. Most patients have had a number of hurried, unsuccessful consultations during which the headache did not go away and they were not told what caused it. Start by eliciting information about the pain pattern, including when and how headaches begin, whether they are continuous or episodic, or as is frequently the case with chronic migraine (constant with periodic worsening), the duration of bouts or exacerbations, and whether any triggers or aggravating factors exist. inquire about the type of Inquire about the type of pain, as well as its location, makeup, and intensity.

Identifying any accompanying symptoms, such as nausea, sensitivity to light, sound, touch, or movement, as well as any symptoms that precede or follow attacks, such as excessive tiredness or energy, yawning, excessive urination, neck pain, vertigo, or visual or sensory disturbances, is also crucial. Ask about any symptoms, such as eye watering, conjunctivitis, nasal congestion, ptosis, eyelid oedema, perspiration, anxiety, fever, neck pain, and rash, that may indicate a primary or secondary headache disease.

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It is crucial to take note of how current and previous treatments have been used, as well as when they were administered. Patients should be questioned and asked why these treatments were stopped after being asked to bring a list of all previously tried medications and dosage information. Ask the patient about their medical history, current non-headache medications, allergies, social history, family history of headaches in particular, and questions about depression, anxiety, and sleep disturbances (including occupation, smoking status, and amounts of alcohol and caffeine consumed). It can also be helpful to inquire about migraine symptoms like frequent stomachaches, motion sickness, or a tendency to hangover more often than usual.

Medication:

Medication: Some drugs can stop (abort) the onset of a migraine or prevent it from progressing. To manage the pain, some are taken. Other medications are used to stop migraines.

Analgesics (painkillers) can aid in pain management for migraines that are mild to moderate. Acetaminophen or nonsteroidal anti-inflammatory drugs (NSAIDs) are frequently employed. They can be used in conjunction with triptans or on their own when a migraine strikes. Analgesics with caffeine, an opioid, or butalbital (a barbiturate) may be helpful for sporadic mild migraines. But excessive use of analgesics, caffeine (found in caffeinated beverages and analgesic preparations), or triptans can result in frequent, more severe migraines. When these medications are taken more than 15 days a month for more than three months, these headaches—also known as medication overuse headaches—occur.

Medication that can stop a migraine is used when it is severe or starts. As soon as someone feels the beginnings of a migraine, they are taken. These are a few of them:

Triptans, also known as 5-HT or serotonin agonists, are frequently employed. Triptans stop the release of chemicals from nerves that can cause migraines. When taken as soon as the migraine starts, triptans work best. They can be ingested orally, sprayed in the nose, or subcutaneously injected.

Ditans are a group of drugs that can stop headaches in their tracks. They function similarly to triptans but might be less likely to cause heart-related side effects (like alterations in blood pressure or heart rate). The only ditan being used right now is lasmiditan, which is taken by mouth. Lasmiditan should only be taken once every twenty-four hours.

Another class of drugs that can stop headaches is called gestants. Gepants prevent a blood protein from causing migraines. Rimegepant and Ubrogepant are orally administered medications.

To treat severe, recurrent migraines, dihydroergotamine is administered intravenously, subcutaneously, and as a nasal spray. It is typically administered along with an antiemetic drug, such as prochlorperazine, which is administered intravenously and treats nausea.

Triptans and dihydroergotamine are not advised for those who have angina, coronary artery disease, or uncontrolled high blood pressure because they may cause blood vessels to narrow (constrict). If older patients or those with coronary artery disease risk factors must take these medications, they must be closely watched. On the other hand, those who suffer from one of these conditions can take lasmiditan, rimegepant, or ubrogepant.

Other drugs can lessen the frequency and intensity of symptoms and are used to prevent migraines. These are a few of them:

anti-epileptic drugs

Beta-blockers

Blockers of calcium channels

Erenumab, fremanezumab, and galcanezumab are monoclonal antibodies.

tricyclic mood stabilizers

Monoclonal antibodies or onabotulinumtoxinA, which is injected into the scalp, forehead, and neck, can be used to treat chronic migraines.

A migraine may be triggered or made worse by skipping, reducing, or taking a medication later than prescribed.

II. CONCLUSION

Due to its widespread prevalence and daily rise in incidence, migraine can be viewed as a silent pandemic. Alarmingly, migraine accounts for 6% of cases among all headache types in men and 18% of cases among women. A doctor must master the art of history-taking in order to diagnose migraines correctly, as this information is crucial. Only the patient's

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history can be used to diagnose the illness; expensive tests are not necessary. The main reason for writing this article was to educate readers about migraines, including their symptoms, complications, prevention, and available treatment options.

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