



A REVIEW ON MEDICINAL PLANT USED IN MIGRAINE

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ABSTRACT

Migraine, a debilitating neurological condition, affects millions worldwide. This abstract delves into the review of medicinal plants utilized in managing migraines. The search for effective natural remedies has led to the exploration of various plant-based treatments. This review highlights the efficacy and mechanisms of action of select medicinal plants in alleviating migraine symptoms. Plants like Feverfew, Butterbur, and Ginger have shown promising results in reducing the frequency and intensity of migraines. Feverfew, known for its anti-inflammatory properties, inhibits the release of chemicals that cause blood vessel constriction. Butterbur, with its anti-inflammatory and antispasmodic effects, has demonstrated a reduction in migraine frequency. Ginger, a versatile herb, possesses anti-inflammatory and anti-nausea properties, aiding in migraine relief. Understanding the pharmacological actions of these medicinal plants is crucial for integrating them into migraine management strategies. Further research is needed to elucidate the optimal dosages, formulations, and potential side effects of these plant-based treatments. In conclusion, the review underscores the potential of medicinal plants as complementary or alternative therapies for migraine sufferers, offering a natural and holistic approach to managing this challenging condition.

This abstract provides a glimpse into the diverse world of medicinal plants and their role in addressing migraines, emphasizing the importance of continued research and exploration in this field.

Key word: Migraine , medicinal plant , Feverfew, Butterbur, Ginger

1. INTRODUCTION

A migraine is a common clinical problem characterized by episodic attack of head pain and associated symptoms such as nausea, sensitivity to light, sound or head movement. It is generally through of as a headache problem, but it has become apparent in recent year that many patient suffers symptoms from migraine who do not have severe headache as a dominant symptoms. These patient may have a primary complaint of dizziness, of era pain, of ear or head fullness, sinus pressure and even fluctuating hearing loss, fortunately treatment regimens long established for the treatment of the classic migraineheadache are generally effective aginsthes.

Over time, other symptoms besides head pain and gastric disturbance have been added, or became important to, developing concepts of migraine. In the early medieval period, sensory symptoms were

often included in discussions of migraine, before slipping out of common use until late eighteenth- century European writers incorporated them once more. The significance of gastric disturbances has waxed and waned, depending on the changing medical frameworks that best seem to Explain migraine at any particular time.

In the same report, the WHO rates severe migraine, along with quadriplegia, psychosis, and dementia, as one of the most disabling chronic disorders (Michael)

In migraine, there are attacks of moderate to severe, frequently one-sided pulsating throbbing headache which increase in intensity on physical activity One-third of the patients suffer The individual attacks are accompanied by lack of appetite (almost always), nausea (80%), vomiting (40-50%), photophobia (60%) sensitivity to noise (50%) and hypersensitivity to certain odours (10%). Signs of activation of the parasympathetic system are observed in up to 82% of the patients. Most often mild watering eyes. When the head pains are one -sided, they may change sides during an attack or from one attack to another.



Figure 1 Patient of migraine

- **EPIDEMIOLOGY**

Migraine epidemiology presents methodological challenges, partially simplified by the use of the new International Headache Society (IHS) Classification. Most previously published migraine studies were clinic-based, which introduces bias since less than 5% of migraineurs consult specialists. Migraine headaches are now divided into those with aura (classic migraine) and those without aura (common migraine). Headache occurs in about 91% of men and 96% of women, migraine occurs in about 6% of men and 18% of women (one-year prevalence). bowel syndrome, and depression. Most common headache-triggering factors included stress, fatigue, sleep disturbances, prolonged exposure to excessive sunlight or heat, and hunger.

- **ETIOLOGY**

The exact etiology of the various aspects of migraine is not completely understood. Migraine is certainly familial, but the exact gene or combination of genes is not known. Likewise there is no explanation why some patients have their first attack before the age of two, others in late adolescence of teenage years, many as young adults and a few after the age of forty We don't know why the migraine in children and adolescents often stops during their adulthood. We cannot explain why childhood and adolescent migraine attacks usually cease after sleep and the adult migraine might continue for days. In fact we cannot explain what causes the typical 3, 4 day adult migraine attack to terminate.

- **PATHOPHYSIOLOGY**

Migraine a collection of perplexing neurological conditions at which the brain and is associated tones have been implicated or major players during an attack. Once considered exclusively a disorder of blood Vessels, compelling evidence has led to the realization that migraine represents a highly choreographed interaction between major inputs from both the peripheral and central nervous systems, with the trigeminovascular system and the cerebral cortex among the main players.

1. TYPES OF MIGRAINE

- **Migraine with aura**

About a quarter of people who experience migraine also experience aura, a series of sensory and visual changes that can range from seeing black dots and zigzags to tingling numbness on one side of the body, or an inability to speak clearly. Aura sets in shortly before or during a migraine and can last anywhere from 10 to 30 minutes. Aura is the second of migraine's four stages, and anyone who experiences it will confirm it is an unmistakable warning sign that the severe head pain is on its way.

- **Migraine without aura**

Diagnosing migraine without aura can be difficult because the symptoms are similar to several other types of migraine. Pulsing or throbbing pain on one side of the head. Photophobia, phonophobia, pain that is made worse by physical activity, and nausea and vomiting are all classic symptoms of Migraine without Aura Is a recurrent headache attack of 4 to 72 hours; typically unilateral in location, pulsating in quality, moderate to severe in intensity, aggravated by physical activity.

- **Migraine without head pain**

Also called a Silent or Acephalgic Migraine, this type of migraine can be very alarming as you experience dizzying aura and other visual disturbances, nausea, and other phases of migraine, but no head migraine, too. The International Headache Society classifies this type as typical aura without headache.

- **Hemiplegic migraine**

If you have ever had a migraine that felt more like a stroke, it was probably a Hemiplegic Migraine. People who experience this type of migraine develop weakness on one side of the body, often with visual aura symptoms and a "pins and needles" sensation, or loss of sensation, on one side of the body. Hemiplegic Migraine doesn't always include

severe head pain.

- **Retinal migraine**

When a headache causes you to temporarily lose vision in one eye, it is a Retinal Migraine. Most common in women during their childbearing years, the blindness can last anywhere from a minute to months, but is usually fully reversible. This is a specific type of aura that accompanies a migraine, and it's a condition we know very little about.

- **Chronic migraine**

If you have a headache more than 15 days a month, you're probably suffering from chronic migraine. Some days patients may mistake the pain for a "tension-headache" or "sinus headache" if the pain is less severe. Many patients with chronic migraine also use acute headache pain medications on more than 10- 15 days per month, and this can actually lead to even more frequent headache.

- **Ice pick migraine**

This type of migraine are pretty self-explanatory.. They're short-usually only lasting 5-30 seconds but incredibly painful. These headaches occur on the orbit, temple, and parietal area of your head. That's where your trigeminal nerve is, which is the nerve in your face that's responsible for biting and chewing, as well as face sensation. The nerve is on the side of your head just past your and above your ear. If you get sharp pains in this area, chances are you're getting ice pick headaches.

- **Cluster migraine**

This is one of the most severe types of pain that a human can experience. With cluster headaches, you'll feel an almost burning pain around and above your eyes, at your temples, and even moving toward the back of your head. You'll often also get red or swollen eyes or a runny nose, among other symptoms. Because they occur in such a large area and provoke other symptoms, cluster headaches can be the most irritating headache, and are sometimes referred to as "suicide headaches".

- **Cervicogenic migraine**

When the pain in your head is actually caused by pain in your neck, you probably have a cervicogenic headache. The pain usually comes from the neck or from a lesion on the spine, which is often confused with pain in the back of your head. It's common for this type of headache to require physical therapy in addition to meditation or other treatment.⁽²³⁾

2. CAUSES

- **Hormonal changes**

Some women experience migraines around the time of their period, possibly changes in the levels of hormones such as oestrogen around this time. These type of migraines usually occur between 2 days before the start of your period to 3 days after. Some women only experience migraines around this time, which is known as pure menstrual migraine. But most women experience them at other times, too, and this is called menstrual-related migraine

Emotional triggers:

- stress
- anxiety
- tension

- shock
- depression
- excitement

➤ **Physical triggers:**

- tiredness
- poor-quality sleep
- shift work
- poor posture

➤ **Dietary triggers:**

- missed, delayed or irregular meals
- dehydration
- alcohol

➤ **Environmental triggers:**

- Bright lights
- Flickering screens, such as a television or computer screen
- Smoking (or smoky rooms)
- Loud noises
- strong smells⁽²⁵⁾

➤ **Menstruation and Menopause**

3. SYMPTOMS

➤ **Prodrome**

One or two days before a migraine, you might notice subtle changes that warn of an Upcoming migraine, including:

Headache'Neck pain A lot of people will say. 'My neck gets stiff and then I get a. Well, it's probably the early stage of the migraine," Dr. Messina says. "Or after a migraine they'll get that neck symptom or they'll have throbbing pain at the back of their neck. "In an online survey, the National Headache Foundation found 38% of migraine patients "always" have neck pain and 31% frequently have neck pain during migraine headache.

Food triggers here a partial list of major food triggers, according to the National Headache Foundation.

- Ripened cheeses (such as cheddar, Emmentaler, Stilton, Brie, and Camembert)
- Chocolate
- Marinated, pickled, or fermented food
- Nuts, peanut butter
- Broad beans, lima beans. fava beans, snow peas
- Figs, raisins, papayas, avocados, red plums
- Excessive amounts (more than 2 cups total) of caffeinated beverages such as tea ,coffee,

Nose stiffness Some people with migraines have sinus symptoms, such as stuffy nose, clear nasal drainage, droopy eyelids, or tearing, Dr. Messina says. One large study found that, among people who complained of sinus headaches, nearly 90% were having migraines.

Tracking down your triggers For people who experience from migraines, certain foods, strong perfumes, flickering lights, and weather changes and other environmental factors can set off an attack. But not everyone has the same triggers, and not every time and that makes the migraine trigger a frustrating prey to hunt down.

For some people, an aura might occur before or during migraines. Auras are reversible symptoms of the nervous system. Each symptom usually begins gradually, builds up over several minutes and can last up to 60 minutes.

• **Examples of migraine auras include:**

Visual phenomena, such as seeing various shapes, bright spots or flashes of light. People will blame it on eye strain and many will get their eyes checked, but that won't make their headaches any better.

Numbness or tingling Some people with migraines have sensory aura. They may have a temporary lack of sensation or a pins-and-needles feeling, typically on one side of the body, moving from the fingertips.

Light, noise or smells trigger or worsen pain In the throes of a migraine attack, the migraine sufferer tends to seek refuge in a dark, quiet place. Bright lights and loud noises can trigger a migraine or intensify the pain. The same is true of certain odours. "Once you've already got a migraine, smells can seem more intense and make it worse. Dr Calhoun says. But a smell can also trigger a migraine in someone who didn't have one before [he or she] walked past the perfume counter.

Post-drome

After a migraine attack, you might feel drained, confused and washed out for up to a day. Some people report feeling elated. Sudden head movement might bring on the pain again briefly. Sometimes, a phase gets skipped, and a migraine attack may occur without causing a healing sick.

4. TREATMENT

Although in general "stronger" medications are needed for severe migraine attacks. many attacks can be controlled with simple analgesics, especially if taken promptly The choice of medication will be based on the patient's previous experience, the severity and duration of the headache and any associated symptoms, the frequency of the attacks, the patient's desire to avoid characteristic adverse effects, comorbid conditions, cost, and the clinician's experience. Experimentation with a medication may be necessary to determine an effective dose that does not produce excessive adverse effects:

TYPE OF TREATMENT

A. Pain relieving medications

- **Pain relievers** – Ibuprofen, Acetaminophen Combination of acetaminophen, aspirin and caffeine may ease moderate pain but are not effective for severe migraines. If taken for long periods, these can lead to ulcers, gastro intestinal

bleeding and rebound headaches.

- **Triptans** – Sumatriptan, Rizatriptan, Almotriptan, Zolmitriptan, Frovatriptan and eletriptan. Combination of sumatriptan and naproxen sodium (treximet) has proved effective in relieving migraine symptoms than individual medications.
- **Ergot** – Combination of ergotamine and caffeine (migrer got, cafe got) are less expensive and also less effective than Triptans. They are most effective where pain lasts for more than 48hrs. Dihydroergotamine is more effective and has fewer side effects than ergotamine. It is also available as nasal spray and in injection form.
- **Anti-Nausea** - Medication for nausea is appropriate and usually combined with other drugs. Metoclopramide or prochlorperazine are frequently prescribed medications.
- **Opiates** - Narcotics, particularly codeine are sometimes used to treat migraine headache pain when people can't take ergots or Triptans.
- **Butalbital Combinations** - Medications that combine the sedative Butalbital with aspirin/acetaminophen are sometimes used to treat migraine attacks. Some combinations also include caffeine or codeine.

B. Preventive Medications

- **Cardiovascular drugs** - Anti-hypertensive medications like Lisinopril, candesartan are useful in decreasing the frequency and severity of migraines. β -blockers and calcium channel blockers like verapamil are also used.
- **Anti-depressants** - Tricyclic antidepressants like amitriptyline, nortriptyline and protriptyline are most effective in preventing certain headaches including migraines. They act by affecting the level of serotonin and other brain chemicals.
- **Anti-seizure drugs** – Divalproex and topiramate and gabapentin reduce the frequency of migraines.
- **Botulinum Toxin** - It is used as treatment for chronic migraines. Injections are made in the muscles of forehead and the neck. When this is shown to be effective, the treatment typically needs to be repeated every 3 months.

C. Home remedies

- Muscle relaxation exercises
- Sleep enough
- Relax and take rest
- Maintain headache diary and act accordingly

5. Preventive medications

Medications can help prevent frequent migraines. Your doctor might recommend preventive medications if you have frequent, long-lasting or severe headaches that don't respond well to treatment. Preventive medication is aimed at reducing how often you get a migraine, how severe the attacks are and how long they last.

Blood pressure-lowering medications. These include beta-blockers such as propranolol (Inderal, InnoPran XL, others) and metoprolol tartrate (Lopressor). Calcium channel blockers such as verapamil (Verelan) can

be helpful in preventing migraines with aura. The B-adrenergic blocking drugs that are used are propranolol, timolol, atenolol, metoprolol, and nadolol. One B-blocker may fail, and another may be effective. Adverse effects include aggravation of asthma, bradycardia, hypotension, fatigue, depression, and masking of the symptoms of hypoglycaemia. Calcium channel Blockers are used, generally verapamil and occasionally diltiazem. Adverse effects include hypotension, constipation, and peripheral edema.

Anti-seizure drugs. Valproate and topiramate (Topamax Qudesy XR others) might help if you have less frequent migraines, but can cause side effects such as dizziness, weight changes, nausea and more. These medications are not recommended for pregnant women or women trying to get pregnant.

7. MECHANISM OF MIGRAINE

It is not understood what generates a migraine attack, although several mechanisms based on brain alterations or activation of the trigeminal nerve-vascular system are clearly implicated. Some aspects of this relating to the notion that the brainstem may act as a migraine generator were reviewed in a 2012 publication^{“(18)”} Other central putative effector regions include the hypothalamus, mainly because of its known role in circadian rhythms, hormones related to stress, and gastrointestinal peptide influences in eating and satiety that also involve the nucleus of the solitary tract. Whatever the initiator, a sequence of events seems to be at play, including:

- Initiator (evoked or spontaneous)
- Clinical or subclinical spreading depression
- Activation of trigeminovascular nociceptors.
- Peripheral and central sensitization of trigeminovascular pathways
- Brain hypersensitivity
- Brain hyper excitability and

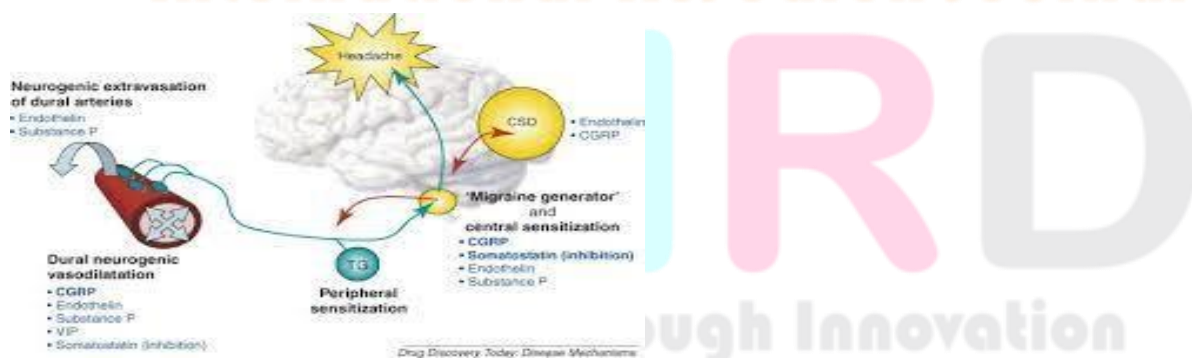


Figure 2 MIGRAINE PATHOPHYSIOLOGY

• VASCULAR AND NEUROGENIC THEORIES:

The cause of migraine headache is still not completely understood. Historically, two independent theories, the vascular theory and the neuronal theory, explaining the etiology of migraine

headache were proposed. The vascular theory was introduced by Thomas Willis where he recognized that "all pain is an action violated" and argued the pain from headache is caused by vasodilatation of the cerebral and meningeal arteries.

- **CORTICAL SPREADING DEPRESSION:**

The alternative and widely accepted theory suggests that cortical spreading depression (csd), a wave a neuronal hyperactivity followed by an area of cortical depression, accounts for the aura and that the headache depends on activation of the trigeminovascular pain pathway. In Formulation and Evaluation of fast dissolving tablet for the treatment of migraine chronic migraine (cm), atypical pain processing, central and peripheral sensitization, cortical hyper excitability, and neurogenic inflammation all have a role to play..

- **CORTICAL HYPEREXCITABILITY IN MIGRAINE:**

As is the case for many episodic disorders, the trigger for migraine attacks has not been precisely identified. Many clinical factors such as diet, alterations in sleep and stress are known the predispose individuals to attacks. The techniques that have been used to generate this evidence include psychophysical studies; visual, auditory, and sensory evoked potentials; magneto encephalography; and transcranial magnetic stimulation of the motor cortex.

8. HERBAL MDICINAL PLANT USED IN MIGRAINE

S.NO	PLANT NAME	FAMILY	PART USE
1.	Feverfew	Asteraceae	Dried leaves
2.	Banana	Musaceae	Fruit
3.	Peppermint	Lamiaceae	Leaves
4.	Coriander	Apiaceae	Roots, leaves
5.	Ginger	Zingiberacea	Root
6.	Caffeine	Xanthine alkaloids	Seed
7.	Watermelon	Cucurbits	Fruit
8.	Moringa	Moringaceae	Leaves, seeds
9.	Ashwagandha	Solanaceae	Stem
10.	peepal	Moraceae	Leaf

9. CONCLUSION

Overall, migraine seems not only to be more common, but also be fundamentally more painful and less visual for women, a finding that has real significance when we consider the way migraine has been represented and researched as a highly gendered neurological disorder since the nineteenth century.

If people with migraine are to receive consistent, appropriate, and, most importantly, effective treatment, those driving health research and policy, whether in individual clinics or at the level of long-term global initiatives to address health in equalities need to be interested in and well informed about how our current understanding of migraine's neurobiology is founded on a centuries-long social, cultural, and medical history, of which neurology is only a part. That history has shaped our knowledge about the disease, our attitudes towards the people who become patients, and the measures we take to address pain. Even more to the point, when we attempt to comprehend historical ideas and practices on their own terms particularly when those ideas seem alien to our own concepts, or when the implications of past practices might still resonate uncomfortably such a history reminds us that our own ideas (not to mention our medicines), however confident we may be now of their value, are also contingent, temporary, and above all can be bettered.

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