Herbal Treatment of Migraine

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Brain disorders are some of the most confounding conditions seen in clinical practice. They present in many different ways, with a cacophony of often confusing or contradictory symptoms and they commonly defy convenient or consistent diagnosis. Yet persons with these conditions often report dissatisfaction with conventional medical approaches and herbalists would be well served to develop familiarity with these disorders and their treatments, including, and especially, migraine.

Here we examine one of the most common neurological conditions seen in the clinic. In the United States, migraine and epilepsy, highly comorbid conditions, are the most common disorders for which people present for neurologic consultation.[1]

Although epilepsy and migraine are challenging to treat with natural healing methods, such treatments have, compared to drugs, much lower potential for toxicity and adverse reactions, while promising a substantial degree of success and much improved patient comfort.

Two Unstable Conditions

Traditional herbal systems would definitely draw a parallel between these two groups of patients. Generally, both conditions are concentrated in the segment of the population with cold and dry physiology. People in this constitution category tend toward nerve and brain disorders in general, and especially those of metabolic instability, lack of homeostasis, movement or motor disorders and pain syndromes. Ayurveda would call this increased vata, while Chinese medicine would label it upsurge of wind. Epilepsy is characterized by dysregulated movement, and migraine manifests with a sudden onset, both typical of conditions experienced by those with cold, dry bodies. These people often have constipation, insomnia and anxiety.

Migraine and epilepsy are heterogeneous families of chronic conditions with markedly variable clinical features, natural histories, and treatment response patterns.[2] Each is characterized by episodes of neurologic dysfunction, sometimes accompanied by headache, as well as gastrointestinal, autonomic, and psychological features and each has an internationally recognized classification system.[3] [4] The aura is a sometime feature of each condition.

Historically, in the conventional medical paradigm, epilepsy and migraine have not generally been thought to be medically related, and conventional treatments are historically dissimilar. A possible association between the two diagnoses has been long discussed, but was not rigorously studied until the 1990s.[5] [6] [7] In the last 15 years or so, however, researchers have begun to report a substantial overlap in these two disorders. Statistically, because migraine is more common than epilepsy, the risk of epilepsy patients developing migraine is much higher than the risk of migraine patients developing epilepsy.

In 1994, Columbia University researchers found that migraine and epilepsy are strongly associated, independent of seizure type, etiology, age at onset, or family history of epilepsy.[8] They evaluated 1,947 patients with epilepsy over the age of 18, as well as 1,423 relatives of the patients, as part of a large study on the relationship between migraine and epilepsy. Findings indicated that more than 20 percent of people with epilepsy have migraines, compared to 11 percent of the general population.

The prevalence of epilepsy in people with migraine ranges from 1% to 17%, depending on study methodology, with a median of 5.9%, which is considerably higher than epilepsy's population prevalence of 0.5%.[9] Migraine risk was highest in patients with epilepsy due to head trauma.

Using proportional hazards analysis to control for years at risk and gender, the data confirm that rate ratio for migraine in epilepsy patients was 2.4. (Migraine is 2.4 times more common in people with epilepsy than in the general population.) These same researchers posit that the comorbidity of migraine and epilepsy may be the consequence of a state of neuronal hyperexcitability that increases the risk of both disorders.[10]

Among the epilepsy patients in the study who were diagnosed as having migraines, 56% had not been diagnosed with migraine by the physician treating their epilepsy. The researchers recommend that clinicians treating patients with either condition should be sensitive to the symptoms and familiar with the diagnostic practices for both disorders.[11] In the case of comorbid migraine and epilepsy, therapy with agents effective for both conditions should be considered. (Of course, the traditional herbal therapeutics perspective is that these conditions have similar cofactors and can be treated similarly in a constitutional approach.)

In 1996, Columbia University scientists looked at the possibility of a shared genetic susceptibility between epilepsy and migraine. With the exception of a positive association of increased risk of epilepsy in sons of females with migraine, the pattern of results was inconsistent with the hypothesis of a shared genetic susceptibility to the two conditions.[12] By 1999, researchers publishing in *Cephalgia* had found that fourteen percent of adult patients with seizures were identified with a diagnosis of migraine. They also found a direct relationship between migraine and epilepsy (a migraine-induced epilepsy) in 1.7% of the patients with seizures. Patients were at increased risk for both conditions if they had migraine with aura and catamenial epilepsy.[13]

As the years progressed, evidence for an association accumulated. By 2003, Bigal, Lipton and Silberstein at Columbia were reporting epidemiologic evidence that migraine and epilepsy are associated.[14] Further papers discussed the link and expanded the understanding of the association and the clinical features.[15] [16] [17] One of the most interesting angles has been the increasing use and effectiveness of anticonvulsant drugs in migraine.[18]

In 2006, Ludvigsson, et al, reported that children with migraine with aura have a substantial increased risk to develop subsequent epilepsy.[19]

The Recent View

The contemporary point of view has come around to the same conclusion as traditional practitioners (albeit not based on the same rationale or constitutional perspective), that migraine and epilepsy are highly comorbid.[20] [21] The cutting edge science is quite clear on this association, but physicians in the trenches have been slow to catch on.[22] It is now accepted that patients with one disorder are at least twice as likely to have the other.[23] [24] [25] [26] [27] In conventional medicine, comorbid disease presents challenges in differential diagnosis and concomitant diagnosis. In comorbid cases, the standard of diagnostic parsimony is not applicable. Individuals with one disorder are more likely, not less likely, to have the other.[28] From the traditional herbal point of view, though, the holistic overview is an advantage. The clinician can search for underlying constitutional similarities and treat the whole person.

In 2006, researchers writing in *Headache* studied one-hundred thirty-seven children and adolescents consecutively diagnosed with idiopathic migraine with and without aura and concluded that there is a clinical continuum between some types of migraine without aura and epileptic syndromes as entities, due to altered neuronal excitability with similar genetic substrates.[29]

More recent work has strengthened the genetic connection. A 2007 study looked at a large family with occipitotemporal lobe epilepsy and migraine and found a conclusive linkage of the traits to a single locus, suggestive of a common monogenic gene defect.[30]

Epilepsy and atypical migraine may share symptoms and even be difficulty to differentiate on EEG.[31] [32] Patients with comorbid epilepsy and migraine may not be aware of their headaches because the headaches are being effectively treated with an antiepileptic drug, obscuring a diagnosis of migraine. On the other hand, diagnostic interviews may lead to the over-diagnosing of migraine in some patients who actually have epilepsy.

Mechanism of an Association

And how might these diseases be connected? Perhaps it is a simple unidirectional causal explanation. Migraine may precipitate epilepsy by inducing brain ischemia and injury. In that case, we would expect the incidence of migraine to be elevated before, but not after, the onset of epilepsy. Then again, epilepsy may initiate migraine by activating the trigeminovascular system. That would lead us to expect an excess risk of migraine after, but not before, the onset of epilepsy. The data, however, show an excess risk of migraine both before and after seizure onset, suggesting a rejection of both unidirectional causal models.[33] [34] [35]

Shared environmental risk factors may account for comorbidity. Head injury is a risk in both disorders. Risk is also significantly increased in people with idiopathic or cryptogenic epilepsy, so known environmental risk factors cannot account for the entire association.[36] Analyses of genetic factors are equivocal regarding possible genetic links, but so far the data seem to reject the idea that genetic susceptibility accounts for comorbidity.[37] Likely the observed comorbidity is multifactorial, but it seems probable that that an altered brain state (increased excitability) might increase the risk of both migraine and epilepsy and mainly account for comorbidity.

Clinical Considerations and Comparisons

Health history is the chief means of differentiating between migraine without aura and epilepsy.[38] Migraine and epilepsy share many symptoms. Certain features are useful in distinguishing them.

Commonly, migraine attacks are of more gradual onset and longer duration than epileptic seizures. The first symptoms of migraine may not even include headache.[39] Nausea is more commonly associated with migraine, while prolonged confusion or lethargy after the episode suggests epilepsy.

Tonic or clonic movements are absent from migraine with aura, but differentiating it from epilepsy still can be tricky. The characteristics of the aura may help.[40] For example, the aura generally lasts longer than 5 minutes in migraine and less than 1 minute in epilepsy. The aura symptom profiles also differ. Positive motor features, and alteration of consciousness indicate an epileptic aura. A mix of positive and negative features, such as a scintillating scotoma (a spot of flickering light in the center of the visual fields that obscures vision and then expands into shimmering arcs of light), favors migraine.[41]

Colorless glittering scotomata and black-and-white zigzag patterns are typical of migraine. The regular angular patterns in the photopsias (perceived flashes of light) that accompany migraine correspond to the cortical structures that generate them.[42] [43] [44] In migraine, the sensory disturbances are paresthesias (pins and needles) that typically begin in the hand and move into the face and tongue over a period of 10 to 15 minutes.

In contrast, visual auras in epilepsy are primarily multicolored, with a circular or spherical pattern.[45] Epileptic visual auras last for only seconds, limiting the patient's opportunity to scrutinize and describe the hallucinations.[46] The aura is often concurrent with head or eye movement and alteration of consciousness.[47] The sensory aura in is briefer and often experienced as burning, cramping, stinging, aching, electric, or throbbing.

The clinical takeaway for the herbalist is that natural remedies typically for a wide variety of headache and seizure phenomena should be considered for migraine.

Clinical Features of Migraine and Epilepsy

Clinical Features	**Migraine**	**Epilepsy**
Family History	Frequently positive for migraine	At times positive for epilepsy
Episode Onset	Gradual	Abrupt
Episode Duration	Hours	Minutes
Consciousness	Typically clear	Typically clouded
Aura	Sensory (typically visual), 20% of cases	Variable
Visual	Black and white, zig zag	Colored, spherical
Sensory	Paresthesias	Burning, throbbing
Nausea	Common	Uncommon
Diarrhea	Common	Uncommon
Olfactory	Less common	More common
Vertigo	More common	Less common
Memory Loss	Uncommon	Common
Postevent Lethargy	Common	Common
Depersonalization	Uncommon	Common
Aphasia	Uncommon (speaking is painful)	Common
Tonic or Clonic Movements	Uncommon	Common
EEG	Nonspecific abnormalities	Spikes and sharp waves

Table 1 Clinical Features of Migraine and Epilepsy

Conventional Treatment

In patients with migraine, a history of epilepsy should be taken before tricyclic antidepressants, neuroleptic or anti-nausea drugs are used, because these may lower seizure thresholds.[48] Some anticonvulsant drugs, such as gabapentin and topiramate, work as treatments for both migraine and epilepsy, providing a therapeutic two-fer. The anticonvulsant divalproex sodium (Depakote, valproate) is approved by the FDA for migraine prophylaxis. Its efficacy has been supported by open and double-blind placebo-controlled studies.[49] [50] [51] [52] The doses used in migraine are generally lower than those effective in epilepsy.

Most of the time, seizures become easier to control as people get older but that is not necessarily the case with migraine. The constitutional tendency toward neurologic instability increases with age. Problematically, some types of anticonvulsant medications can cause bone loss when taken over a long period of time, exaggerating this common problem of aging.

Ayurvedic Herbs for the Mind and Brain

Ayurveda theory and therapy encompasses positive and negative sides of every aspect of living, including behavior and conduct. These principles are designed specifically to achieve and maintain internal and external balance. Given due importance are the body (*sharira*), the senses (*indriya*) and the mind (*manas*).

Medhya is a concept that implies intellect, or wisdom. It is mental development, or mental therapy. Medhya means something that is mighty, vigorous and pure, as well.

There are many ways to bring medhya into play in the mind. Anything that promotes the sattva guna can be applied. The yamas and niyamas of yoga are aimed at this. Ayurvedic herbal medicines play a role, and bhasma preparations containing emeralds, gold and diamonds are important.

Medhya herbs and therapies are typically thought of as those that promote the capabilities of the Western world calls the mind, or one could say, the brain. Medhya herbs engender and summon intelligence, memory and mental perception.

Herbs are very powerful tools to heal the mind and emotions. More powerful than food, they are safer than drugs. Ayurvedic herbalists have classified certain herbs that have a particularly positive effect on the mind. They can improve cognition, learning capability and neurological function. Using a general brain nourishing and regulating herbal strategy often results in relief of migraines over time.

Ayurveda makes little distinction between remedies for the mind and the body. Holism is the keyword. According to American spiritual teacher Baba Hari Dass, “to fix the head, cure the stomach first”.[53]

Ayurvedic literature is rife with hyperbole. While this is good, in the sense of promoting optimism, it can be somewhat confusing for those less acquainted with the details and daily practical use of herbs. This is especially so when we talk about therapies for the mind. In Ayurveda texts, the modern category that would include migraine and epilepsy may be referred to ambiguously as “insanity”, a catchall term for a wide range of mental and neurological disorders. According to Ayurvedic herbalist Prashanti de Jager, we should take it with a grain of salt when the classic texts talk about curing “insanity”.[54] Nonetheless, many of these therapies are very effective, and can help substantially in managing brain illnesses. Perhaps a better way to interpret this translation would be an effort toward “brain balancing”. The author has found many of these remedies that refer vaguely to insanity to be applicable in the vata derangements of migraine (and other conditions, including autism), when applied with proper energetic differential diagnosis.

Bitter taste, for example, is said to be composed of air and ether elements, the same elements that predominate in the mind (think central nervous system), so herbs with bitter taste generally open the mind, increase the sensitivity of awareness and improve central nervous system function. Bitter tasting herbs, such as chamomile and gotu kola, are cooling, calming and mind expanding, so they combat mental dullness. Sweet taste, composed of earth and water elements, is grounding and calming. Sweet herbs for the mind include ashwaganda and licorice.

Consider ghee, whose benefits increase with its age. Aged ghee (up to a hundred years) reduces all three doshas and dispels blockages in the srotamsi.[55] Since it has a special ability to clear the manovaha srotas (mental channel), it used for mental diseases, namely epilepsy, psychosis and by extension, migraine.

Commonly vata dosha is the culprit in headache. The thrust of many therapies is to control vata, the dosha that regulates the nervous system. Dashmula (an Ayurvedic formula containing ten warming roots) is a

prime vata pacifying remedy, taken as powder, tea or as an enema. Dashmula decoction, with ghee, meat soup, or white mustard is useful for the ambiguously termed "insanity".

Baba Hari Dass talked about consuming pumpkin seeds for "craziness".[56] Of course, now that we know that the brain is a tremendous user of essential fatty acids, this makes sense, considering that oil is the main treatment for lessening vata.

When seeking herbs to balance the brain, gotu kola (*mandaakuparni*), brahmi (*Bacopa*), shankpushpi and jatamansi stand out. Most folks would profit from long term use of one or more of these at modest doses, and they are go-to herbs for the first steps in treating neurological conditions, including migraine and epilepsy.

Jatamansi is an outstanding sattvic rasayana herb that opens and cleanses the srotaamsi and brings in prana. The five parts of the lotus (stem, seed, stalk, stamen, and leaves), especially when taken with milk, promote healthy brain function.[57]

Amla, one of the three herbs in the widely used triphala combination, is a first rate general herb for the brain. Having the rare profile of having five of the six tastes, it has wide uses, especially for pitta conditions. Many authorities say that amla is the best for preserving youth and brain processes.[58] Used with sesame, honey and ghee in morning, it is a rasayana that heightens neurological functioning. One of its names is Dhatri, the nurse, a nod to its broad healing effects. Another triphala herb, haritaki, brings long life and a healthy brain. Use it with raw sugar, honey, dried ginger, pipali and salt.

Ashwaganda is a paramount herb for the nervous system. Used consistently over years, it brings a calm and grounded quality to thinking and to life. Ashwaganda and shatavari, mixed with mandukaparni and shankpushpi, represents a classic combination to promote brain function and nerve healing over the long term. [59]

You can think of bala as a cooling version of ashwaganda.[60] This herb is given with milk for "insanity".

Pepper is used in Ayurveda as an anti-kapha herb that burns up ama. Its warming nature balances cold herbs in formulas. It is ideal for conditions such as kaphaja headaches.

A few other miscellaneous herbs are worth mentioning. Juniper berry with barley, cooked in milk and water, with added ghee, honey and oil is employed as an enema to enhance digestion, strength and brain function.[61]

Saffron (*kesar*) is a tridoshic nervine. The author's mentor, Yogi Bhajan, prepared this as a tincture with camphor, and dispensed it in 10 drop doses.

Finally, an Ayurvedic tip: use shirodara, a slow, relaxing stream of warm herb oil on the forehead. It is relaxing and helps to manage excess vata, the underlying cause of migraine, kin thee head.

Do not treat migraine casually. It is a serious and complicated condition, with many causes, and a collection of associated family and social issues. Herb doses should be carefully titrated to achieve the best clinical effect, and least side effect, as the doses sometimes need to be quite high.

Specific Herbs for Migraine

Calamus root (*Acorus calamus*), or vacha, is a major herb for the mind and brain in Ayurveda. It is said to stimulate the power of self-expression and to enhance intelligence. Ancient yogis and seers used this herb. Calamus promotes circulation to the brain, sharpens memory, promotes awareness and increases communication and self-expression, as well as balancing circulation in the head. Traditionally, this root has been used for the treatment and management of headache and migraine.[62]

It is a bitter herb that acts as a carminative and mucolytic. Chanchal Cabrera is a close colleague who practices in the British herbal tradition. She says that, in the British herbal tradition, calamus root is thought to be a stomach acid balancer. A dose of up to 5 ml of tincture per day will reduce acid, while higher doses stimulate acid production.[63]

These qualities, taken together, obviously suggest vacha as a superior remedy to pacify vata, which it is. This herb is often combined with gotu kola, which is cooling and mild. The complementary energetics makes the combination suitable for a wide variety of people. For typical vata disorders, it combines well with brahmi, jatamansi, shankpushpi and licorice.

The *Charaka Samhita* lists vacha medicated ghee for nerve maladies involving vata and kapha. It is prepared by decocting one part of vacha in four parts ghee and eight parts water.

The author has had extensive experience with using vacha to treat chronic migraine, and it can often completely replace medication over time. Cross taper the dose of vacha with the medication, with close

monitoring. Sarpaganda, likewise recommended for the ubiquitous "insanity", combines well with vacha for vata concerns. Also consider the vacha prepared as herb infused ghee, along with brahmi, hing, choraka (*Angelica glauca*) and jatamansi.[64] In a 2012 paper in the *Journal of Ethnopharmacology*, a saponin rich extract of Acorus calamus reduced neuropathic pain and neuronal functional changes.[65]

Vacha is combined with triphala as a general rasayana that bestows brain balance.[66]

Calamus is quite emetic in doses not much larger than the suggested dose. Higher doses also may stimulate "weird thoughts" (not quite hallucinations, but unusual mental experiences) that are not necessarily pleasant. Based on these issues, it may not be compatible for co-administration with other psychoactive drugs, although little is known about these concerns.

Calamus contains asarone and beta-asarone, constituents of the essential oil that are known carcinogens and liver toxins. Use caution with the Asian genetic varieties of *Acorus calamus* in those with liver dysfunction.[67] The European variety may not have this effect, but also does not seem to have the potent psychoactive characteristics. The North American species has no asarone. Asarone has a sedative effect.[68] The Chinese species, used essentially the same way, is *Acorus gramineus*.

The neurological properties of vacha have been credited to the asarones. They are precursors to 1,2,4-trimethory-5-propenylbenzene, a phenyethylamine that is thought to be ten times as potent as mescaline.[69]

There has been much hand wringing about the potential problems with calamus, but remember that it has been used for millennia by peoples on several continents, as medicine and food. Prashanti de Jager calls it, "Another case of an uninformed witch hunt, similar to the recent fate of Ephedra and bala."[70] Traditional Ayurveda is silent on this issue.

Past concerns have limited the use of vacha in America. This is a truly useful and valuable herb. Many people could benefit from calamus if they became aware of it. According to Prashanti de Jager, "Don't be fooled, the calamus from India is safe and endlessly useful."[71]

Vacha is a potent herb, so the effective dose is quite reasonable, which increases compliance.

Use 1 to 4 grams per day. Work up gradually to the effective dose.

Apply vacha as a medicated ghee in the nostril for general brain and mind benefit, or sniff the milk decoction our infused oil for the same purpose. Calamus decoction is used in a neti pot as a general remedy for brain conditions.

The "hallucinogenic" dose of calamus is supposedly about 30 grams of the fresh herb. Frankly, you would be vomiting long before you ever ingested that much. People have tried, and were sorry they did.

Brahmi (*Bacopa monniera*), a traditional Ayurvedic herb, has been used in medicine for uncounted centuries for the treatment of nerve diseases, and to improve memory. Brahmi is a nervine tonic, diuretic, and sedative.

In India, gotu kola (*Centella asiatica*) is often used interchangeably with another similar herb, Bacopa (*Bacopa monniera).* Both are called "brahmi". Bacopa can also be called water hyssop. Centella can also be called gotu kola (the Sinhala name) or mandukaparni ("frog leaved").

These plants are not very well distinguished in the old Ayurvedic texts. There is some discussion about how interchangeable they really are. But a careful look at the texts pretty clearly indicates that two different plants are being discussed.

Centella is a sweeter, slightly heavier plant, with more tonic qualities. Bacopa is a colder, bitterer plant, with slightly more detoxifying qualities. Both target the brain and nerves.

Baba Hari Dass differentiates Centella as the "weaker brahmi" and Bacopa as the "stronger brahmi". Charaka recognizes both as being supporters of mental faculties, but maintains that brahmi has a more specific role in treating mental diseases (insanity, anxiety, depression, epilepsy), while mandukaparni advances mental function through a more general rasayana effect. Charaka classified Centella as an intellect promoting or nervine tonic and as a "divine great drug".

Bacopa is a nervine tonic, diuretic, and sedative. The sedative and cardiotonic effects are due to the presence of hersaponin, one of four saponins isolated from the plant. Other active principles of brahmi, contained in the leaves, are steroidal saponins, including *bacosides*. These compounds provide the capability to enhance nerve impulse transmission and thereby strengthen memory and general functioning.[72]

Baba Hari Dass mentioned brahmi often. Again, for the rather vague "craziness", he used it with calamus and shankpushpi.[73] Brahmi and gotu kola are often used interchangeably, and are, taken together or

separately, considered to be the foremost general herbal medicine for the mind. Old ghee, processed with brahmi juice, vacha, kustha and shankpushpi, assuages "insanity" and assorted nerve conditions.[74]

Bacopa is a traditional treatment for convulsive disorders. Preliminary scientific information finds that perhaps 50% of patients will have lowered occurrence of seizures.[75] A 2000 mouse experiment used Bacopa along with a powerful anticonvulsant drug known to cause cognitive problems. It demonstrated that Bacopa reduced the cognitive decline caused by a drug.[76] Acquisition and retention of memory both showed improvement without affecting the benefits of the drug.

The typical dose is two grams of the whole herb twice a day with warm water, but the effective dose to prevent or cure migraine could be many times higher, as the herb is essentially nontoxic.

Mandukaparni leaf (*Centella asiatica*), or gotu kola, is a mainstay of herbal medicine in Ayurveda, although this herb has been around the fringes of European herbalism for many years. In fact, it was used in France in the 1880's. Widely considered a superior herb for the nervous system, gotu kola has a host of benefits.[77]

Gotu kola balances all three doshas. It is a bitter/cold/sweet herb, and an excellent nerve nutrient. As the main herb in Ayurveda for the nervous system, it is used to increase general brain function and balance vata.

Gotu kola strengthens a wide range of brain concerns.[78] The active substances in gotu kola are thought to be triterpenes (steroid-like compounds), which have a balancing effect on connective tissues. These triterpenes improve the function and integrity of the collagen matrix and support the "ground substance," the basic "glue" that holds the cells together.

Since gotu kola is basically a mild salad vegetable, the dose can be very high. Try one to four teaspoons of fresh juice every morning. For address chronic migraine aggressively, use one to two ounces of dry herb, by weight, as a tea, per day. It is often taken with ghee.

Gotu kola also makes a tasty cooked green vegetable. Carefully clean the dried herb, removing the stems. Rehydrate the herb. Cook it much like spinach. It's a little bitter, but quite palatable. It goes well, nixed half and half with spinach. Use the mix to prepare saag or korma. Gotu kola and spinach saag has become a favorite dish for students to share in the author's clinical herb classes.

Use gotu kola ghee as nasya for long-term migraine healing. Take 2 drops in to each nostril up to several times per day.

Gotu kola oil is used for abhyanga to treat the nervous system. As a body wrap, it enhances blood circulation, clears the skin, improves memory; and increases jatharagni.[79]

Shankpushpi herb (*Evolvulus alsinoides*) is an outstanding rejuvenative tonic for the mind and nerve tissue. The plant is said to have profound mystical properties, with an affinity for the heart, throat, third eye and crown chakras.

The herb is especially effective for vata brain disorders. Often taken with or prepared in ghee, it promotes tranquility without dulling the mind. For such disorders, it combines well with brahmi, jatamansi, calamus and licorice.

According to the *Astanga Hridyam*, ghee, cooked three times with shankpushpi juice and milk, makes even the dullest mind sharp.[80]

Guduchi herb (*Tinospora cordifolia*) is a vine from the Moonseed (Menispermaceae) family. It is often found climbing neem trees throughout tropical India and Southeast Asia, and is said by some to be the best herb for clearing the srotamsi. It is a potent, yet well tolerated, detoxifier that is found in many Ayurvedic formulas. Because of this ability, it is included in formulas to assist the delivery of herbs to the tissues. Guduchi aids all aspects of healthy metabolism (the 13 agnis). It particularly clears the srotamsi in the brain, facilitating its function (medhya rasayana). It supports proper function of shleshaka kapha, so it also aids proper communication and coordination between all the various cells and their many related functions, promoting better overall health.

Guduchi is tridoshic, and therefore a widely useful herb. As it is a cleansing and building herb, it can be given in almost every case. It has a special affinity (*prabhava*) as 'nectar' to the body and mind. The juice of the whole guduchi, along with gotu kola, the paste of shankpushpi, and powdered licorice promotes brain neurological function.[81]

Researchers have confirmed the antipyretic activity of guduchi.[82] Bitter herbs with hot temperature are rare. This combination of energetics is specific for detoxification while still promoting circulation of the body's fluids. Use powder at 3-10 grams per day.

Castor oil (*Ricinus communis*) as a wonderful panacea for a large number of health concerns.[83] Castor oil is pungent and sweet with heating energy. Applied externally, it is analgesic and nervine, so it is the main treatment for nerve conditions.[84] Castor oil is the main treatment for vata dosha and is a standout for conditions of the head and neck, a main site of vata. It is a warming, heavy, sweet oil, so it is ideal to reverse high vata in that area. It is a classic remedy for chronic brain dysregulation.

Herbalist Michael Tierra uses it for all vata derangements, including pain.[85] Following the vata idea, this very special oil is used in the treatment of epilepsy, paralysis, insanity and many other nervous system disorders. Apply castor oil to large areas of nerve involvement, including as head massage.[86]

Rauwolfia root (*Rauwolfia serpentina*), or Sarpaganda, is indicated in brain disorders.[87] It is said to remove "evil spirits" (think migraine and similar issues). The author has been very successful in using it for vata brain conditions, including migraine. Use 1-2 grams per day.

Camphor (*Cinnamomum camphora*) is a large, handsome evergreen camphor tree that is the natural (as opposed to synthetic) source of camphor gum (crystallized distilled oil). It is a slightly warming, pungent and bitter remedy that is used internally as a very powerful detoxifier. It is a powerful stimulant for digestive, circulatory and nervous systems. It is a tissue decongestant, energizer and nervine.

The author's mentor, Yogi Bhajan, recommended camphor gum as a first rate blood cleanser. He concocted a tincture of saffron and camphor which he called "blood of Christ", and recommended it for extreme cases in need of detoxification, taken internally. Ghee and camphor drops are administered through the nose for brain disorders. As powder, use 1 to 2.5 grams daily.

Asafoetida gum (*Ferula asafetida*) is a warming, detoxifying carminative that balances vata dosha, and has a general clearing effect on brain and mind function. Use half a gram daily in combinations. From the Ayurvedic perspective, warming the body and increasing digestion reduces vata dosha, the main root cause of migraine and related imbalances.

Saraswati Churna is a brain building Ayurvedic combination containing well-known brain herbs and a handful of warming digestive aids that suppress vata. The ingredients are ashwaganda, vacha, shankpushpi, ajwain, cumin, trikatu and rock salt. Use 1 to 3 grams twice a day with honey and ghee to enhance brain stability.

Migraine

Living with even occasional migraines can make life almost unbearable. According to the National Health Interview Survey, published in the journal *Headache* in 2013, 16.6% of adults 18 or older reported having migraine or other severe headaches in the last 3 months.[88]

Recurrent, pulsating pain on one or both sides of the head characterizes migraine headache, which usually is accompanied by one or more associated symptoms such as nausea, vomiting and an increased sensitivity to noise and/or bright light.

Migraine is a comparatively common disorder. Population-based studies yield 1-year period prevalence estimates of 6% in men and 15–18% in women. Migraine is approximately three times more common in women than in men.[89] [90]

The word migraine comes from the Greek *hemicranios*, meaning half a head.

Before we talk about herbs for migraine, let's mention how confusing this diagnosis can be. Over 150 diagnostic headache categories have been established.[91] Many people do not have the textbook type of migraine, and assessment is tricky. Different categories have a lot of overlap. It was once thought that migraine tension-type headache were totally separate disorders. But now it's known that headaches are not that clear cut. In the neighborhood of 4% of the U.S. population, around 14 million people, deals with Chronic Daily Headache (headaches that occur on 15 or more days per month). Chronic daily headache is an umbrella category that consists of four different types of headaches: chronic migraine, chronic tension-type headache, hemicrania continua, and daily persistent headache. Any recurring headache that is debilitating enough to keep you away from work is probably a migraine. Approximately 2% of the population experiences chronic migraine, which is when migraines occur on 15 or more days per month.[92]

The exact causes are unknown, but they are related to blood vessel contractions and other changes in the brain. Migraine pain is severe, pounding, throbbing pain, which can last from 4 hours to 3 days. Commonly, migraines occur 1 to 4 times per month. Migraines symptoms include light noise or odor sensitivity, nausea or vomiting and loss of appetite.

Common migraine triggers include stress (either during a stressful time or right after stress subsides), changes in sleep (either getting too much or too little sleep), fasting or skipping meals, changes in barometric pressure and weather, bright light or reflected sunlight, foods, such as chocolate, excessive caffeine or caffeine withdrawal, smoking or smoke exposure and, in women, the menstrual cycle. Add to these strong emotions alcohol (red wine) food additives (aspartame, monosodium glutamate) and nitrates (found in cured meats). Eliminating just the food triggers by keeping a food diary can resolve a large number of cases.

Migraine Symptoms

Migraine symptoms center on, of course, a terribly painful, vascular (throbbing) headache. Along with pain, sensitivity to the environment and nausea are very common. The episode lasts four hours to three days, occasionally longer.[93]

Migraine Symptoms

A pounding or throbbing headache. Often begins as a dull ache and develops into throbbing pain.
Pain usually aggravated by physical activity.
Pain can shift from one side of the head to the other, or it can affect the front of the head or whole head. (One sided is classic.)
Sensitivity to light, noise, and odors
Nausea and vomiting, stomach upset, abdominal pain
Loss of appetite
Sensations of being very warm or cold
Paleness
Fatigue
Dizziness
Blurred vision
Diarrhea
Fever (rare)

Table 2 Migraine Symptoms

Etiology and Pathophysiology

Although the mechanism of migraine remains incompletely understood, evidence strongly suggests that migraine is a neurovascular disorder.[94] The aura that precedes some migraines is a slow expansion of other neurologic symptoms, often visual, associated with neuronal changes that result in spreading neural depression from the occipital cortex. Excitatory changes bring about increased blood flow, later followed by lowered blood flow caused by neuronal inhibition.

The trigeminal nerve and the blood vessels it innervates probably represent the anatomic substrate for migraine pain. Pain-sensitive cranial nerves and dura pass input through the ophthalmic division of the trigeminal ganglion to the trigeminocervical complex (the trigeminal nucleus caudalis and dorsal horns of C1 and C2), producing referred pain in the head and upper posterior neck. When the peripheral branches of the trigeminal nerve are activated during migraine, pain results from neurogenic inflammation produced by the trigeminal nerve endings and associated with the release of other pain substances from plasma, platelets, and mast cells (histamine, prostaglandin, serotonin). These substances induce vasodilatation and the sensitization of trigeminal nociceptive nerve endings. Throbbing pain and exacerbation by activities such as bending over, head movement and walking may be indicative of mechanical hypersensitivity of meningeal cells. Nitric oxide released from blood vessels, nerve endings, or brain tissue can be a trigger for migraine pain.

There is central processing of pain signals in the trigeminocervical complex. A continuous discharge in this pain control system might occur from stimulation from the cortex or hypothalamus caused by stress or by excessive input from cerebral or extracranial vessels. The migraine prodrome likely has its origin in the hypothalamus.

Exact causes are unknown, but are related to changes in the brain and genetic causes. There is an inherited tendency to be affected by certain migraine triggers. Eighty percent migraine sufferers have a family

history of migraines.[95] If one parent has a history of migraines, the child has a 50% chance of developing migraines, and if both parents have a history of migraines, the risk jumps to 75%. For many years, scientists believed that migraines were linked to expanding and constricting blood vessels on the brain's surface. It is now believed that migraines are caused by inherited abnormalities in certain areas of the brain.

Triggers

Migraines are often triggered by environmental factors, with 85% of migraineurs reporting such triggers. Patients typically have multiple triggers, with a mean of three.[96] A change of weather is a trigger for up to 50% of migraineurs. Other environmental triggers are heat, high humidity, and high altitude. There are numerous additional triggers, including stress (50% of patients), letdown after stress, vacations, and crying. Missing a meal (40%), lack of sleep, oversleeping, and fatigue are also common triggers. Sensory triggers include bright lights, glare, flickering lights, loud noise, and strong smells (perfume, cigarette smoke). Up to 50% of patients report alcohol as a trigger; which can be all forms of alcohol or only one type, such as red wine or beer. Up to 45% report food triggers such as chocolate, dairy products (particularly cheese), citrus fruit, fried foods, and nitrates and nitrites in cured meats or fish. Other triggers include minor head trauma, exertion, and nitroglycerin.

Tyramine is formed from the breakdown of protein as foods age. Tyramine containing foods (aged cheese, red wine, alcoholic beverages, and some processed meats) are common triggers.

Food triggers may be responsible for triggering up to 30% of migraines.

"Flight or fight" chemicals can provoke vascular changes that can cause a migraine. Stress emotions, such as anxiety, worry, excitement, and fatigue can increase muscle tension and dilated blood vessels can intensify the severity of the migraine.

Types of Migraines

Migraine with aura (20-30% of migraines) is known as "classic" migraine, whereas migraine without aura is known as "common" migraine. An "aura" is a physiological warning sign that a migraine is about to begin. An aura can occur one hour before the attack of pain and last from 15 to a maximum of 60 minutes. Visual auras include:

- Bright flashing dots or lights
- Blind spots
- Distorted vision
- Temporary vision loss
- Wavy or jagged lines

An aura can affect the other senses, simply as having a "funny feeling," or not be able to describe the sensation, including ringing in the ears, or having changes in smell (such as strange odors), taste or touch. Migraines without auras are more common, making up 80%-85% of migraines. Several hours before onset, migraineurs often experience vague symptoms, including:

- Anxiety
- Depression
- Fatigue or tiredness

Transformed migraines are chronic, daily headaches with vascular quality (throbbing). They are less severe but more frequent than classic migraines. Most patients have a history of migraines, usually beginning in childhood. The onset of daily transformed migraine headaches is generally during the 20's and 30's. They are probably caused by daily use of pain relievers, which can lead to rebound headache.

Who gets migraine?

More women than men have them. About 70% of migraineurs are female. The lifetime prevalence is 25% for women and 8% for men. [97] [98] Migraine begins before the age of 20 in 50% of cases and after age of 50 in only 2%. The highest prevalence is from 25 to 50 years of age. Of female migraineurs, 60-70% report a menstrual relationship. A quarter of all women with migraines suffer four or more attacks a month, with 35% experiencing 1-4 severe attacks a month and 40% experiencing one or less than one severe attack a month.

The recent awareness of the high incidence of the C677T mutation of the methylenetetrahydrofolate reductase gene, MTHFR, with associated increase of homocysteine levels in patients with migraine with aura led to discussion of appropriate treatment. A trial of cyanocobalamin, folate, and pyridoxine resulted in a reduction of homocysteine levels and improvement of migraines.[99]

From the traditional natural healing perspective, the migraineur, usually female, has a cold, dry, unstable, variable physiology, is emotionally sensitive (applies to men, too), constipated and experiences insomnia and often liver stagnation.

Migraine Overall Physiology (Typical Patient)

Main problem area	Large intestine
General Nature	Variable, weak, frail
Temperature	Cold
Moisture	Dry
Frame	Slender, disproportionate
Weight	Low
Skin	Rough, dry, cool
Hair	Dry, kinky
Appetite	Variable, low, Needs frequent
Digestion	Irregular, gas
Feces	Constipation, dry, hard
Mental	Fluctuating, moody, curious
Memory	Generally poor
Emotional Strengths	Creative, artistic
Emotional Weakness	Anxiety, fear, insecurity
Sleep	Insomnia, erratic
Dreams	Flying, jumping
Habits	Hasty, erratic
Profession	Plays, drama, dance
Activity	Restless
Menstruation	Irregular, Scanty, Cramps
Sexual	Variable, low libido, fantasy

Table 3 Typical Migraine Patient

Co-Existing Conditions (Comorbidity)

Migraine is a disorder closely associated with a particular physiology. This constitutional pattern also manifests as many other conditions, so migraine presents as comorbid with a long list of other chronic condition characterized by cold, dryness, constipation and neuronal instability.

Comorbidity commonly associated with migraines:[100]

- Asthma
- Chronic fatigue syndrome
- Hypertension
- Raynaud's phenomenon
- Stroke
- Sleep Disorders
- Epilepsy
- Lupus (SLE)
- Multiple Sclerosis
- Essential tremor
- Psychiatric: bipolar disease, major depression, generalized anxiety disorder, panic disorder, simple and social phobia
- Possibly associated with hypertension, mitral valve prolapse, and patent foramen ovale[101]

Conventional Treatment

Medical treatment involves analgesics (ibuprofen, aspirin, acetaminophen) and antinausea medications. Abortive medications include the triptans, which produce vasoconstriction by binding serotonin, reducing neurogenic inflammation, and ergot, and older vasoconstrictor.

Prophylactic medications include beta blockers, calcium channel blockers, NSAIDS, tricyclic antidepressants, SSRI antidepressants and anticonvulsants.

Sometimes biofeedback, food diary and food trigger avoidance, stress management, a regular eating schedule and adequate rest are recommended.

When selecting drugs for migraine prophylaxis, it is sometimes desirable to treat comorbid conditions with a single agent. For example, when migraine and hypertension occur concomitantly, a beta blocker or calcium channel blocker may be the treatment of choice.[102]

Chinese Medicine Concept of Migraine and its Treatment

Without recognizing migraines specifically, Chinese medicine identifies three differentiations of headaches. A headache can be due to invasion of pathogenic wind into the meridians and collaterals, due to deficiency of both qi and blood or due to upsurge of liver yang, which is probably the closest resemblance to modern concepts of migraine. Liver qi often rises when the liver is in disharmony.

Migraines involve excess energy. Sudden headaches frequently appear with external pernicious influences, which disturb the yang or qi of the head (as with the modern conceit of triggers), whereas chronic headaches more often accompany internal disharmonies. Severe headaches are usually excess, while slight, annoying headaches usually indicate deficiency.[103]

Bai zhi root (*Angelica anomala*) is the classic Chinese blood moving remedy for migraine. According to Chinese medical philosophy, it balances energy flow in the head, relieving pain.

White Peony root (*Paeonia lactiflora*) ("Bai Shao") is a standout in the author's toolkit for migraine. It is a blood nourisher that supports the liver, which is so important in hormone balance and prevention of liver disharmony. Peony is a very sour, bitter, cool yin and blood tonic that is sedative and anti-spasmodic.

Baical scullcap root (*Scutellaria baicalensis*) is a Chinese anti-inflammatory that is preventive at 4 grams per day and possibly abortive at 4-10 grams per day. Use it as tea, tincture, powder or capsule.

As a tea, start with ½ ounce, dry weight, of chopped herb, brewed, per day.

Additional classic herbs for liver disharmonies, especially migraine-type symptoms, include Gastrodia tuber (Tian Ma) and Uncaria vine (Gou Teng). These herbs often form the core of migraine classical combination formulas, such as Tian Ma Gou Teng Wan. Another recent study found that a combination formula of Bai zhi, Ligusticum root and green tea leaf was an effective analgesic in migraine.[104]

Herbs for Migraine

Our strategy for initial management must begin with astute differential diagnosis to eliminate other severe headaches (cluster, sinus). Then we move on to abort pain, if at all possible. (Sometimes chewing aspirin will be abortive.) Then there is the need to normalize cranial circulation quickly.

As preventive strategy, normalize cranial circulation long term, including whole body circulation. Warm and moisten the body, treat constipation, remedy liver stagnation and balance hormones.

Therapeutic settings for preventive and restorative therapy should be warm, with a blanket and hot water bottle. The environment should be cozy, homey and relaxing, with soft light and quiet sound and music.

Let's start with the star performers.

Butterbur root and leaf (*Petasites hybridus*) has been used in European traditional herbalism to treat pain. Modern research is confirming this use, most especially for the treatment of migraine. [105] [106] In scientific studies, consistent use of butterbur produced significantly fewer migraine attacks, fewer migraine days and a reduction in migraine pain. Two clinical studies demonstrated its effectiveness as a preventive treatment for migraines. The studies, both double-blind, placebo controlled, involved a total of 128 patients. Butterbur significantly reduced (as much as 60%) the frequency of migraine attacks, compared to placebo. In scientific studies, butterbur produced significantly fewer migraine attacks, fewer migraine days and a reduction in migraine pain.[107] Standardized extracts of butterbur are now available in the United States. These are usually standardized for at least 7.5 mg of Petasin and Isopetasin. A 2014 overview paper by authors at Wayne State

University College of Nursing described Petasites hybridus as a promising prophylactic treatment for pediatric migraine.[108]

You must use pyrrollizidine alkaloid free versions. Petadolex Petasites hybridus Extract (Butterbur Root) (28-44:1) is one such. At 50 mg per tablet, use 2 per day.

Feverfew leaf (*Tanacetum parthenium*), a decorative relative of the daisy, sometimes called "the aspirin of the eighteenth century," has been rediscovered. Traditionally used in European herbalism as far back as Greek antiquity, for all types of pain, such as menstrual cramps, headache and arthritis, this remedy has gotten serious attention recently as a migraine preventive.[109] On the whole, scientific evidence, while sparse, is positive.[110] [111] [112] There are many types of preparations available, which makes comparison tricky. Taken daily, it significantly reduces the incidence of migraine attacks.[113]

The active constituents seemingly include one or more sesquiterpene lactones, including parthenolide. Other probable actives include flavonoid glycosides and pinenes. Although the precise mechanism remains unclear, the journal Pain reported in 2013 that parthenolide inhibits nociception and neurogenic vasodilatation in the trigeminovascular system by targeting the TRPA1 channel, supporting the presumption that the pain generator is the trigeminal system.[114]

The New York Headache Center reported in 2012 that feverfew had been proven to be effective.[115] One small study found that combining feverfew with willow bark markedly increased the effect.[116] A 2012 study involving 69 women found that 150 mg of feverfew per day, plus acupuncture, was more effective than either therapy alone.[117] In 2014, Italian researchers published the position that promising tools to treat migraine included feverfew (along with butterbur and ginkgo).[118]

Herbalists have revived the historical use, recommending feverfew for acute headache.[119] [120] Often it is taken in doses of 300 mg every 15 minutes for an hour when the headache starts. Feverfew can produce a little queasiness, so work the dose up cautiously. Taking it with food might help.

For migraine prevention, begin with 125 mg per day, and work up to the dose that gives the best prevention. Larger doses may control other chronic pain disorders.

Be sure to give the herb enough time to work, say at least a month of daily use. And most people stop at too small a dose. If using good quality herb powder in capsules, start with 500 mg per day and gradually increase until you experience complete prevention. Many folks need to use 5 grams for complete control.

Skullcap leaf (*Scutellaria lateriflora*) serves as a nerve tonic and tissue rejuvenator, a *neurotrophorestorative*.[121] In addition, it seems to have a protective effect on the liver. These qualities suggest skullcap for seizure and movement (chorea) disorders, including a variety if twitches, ticks and tremors, for which it has been used for centuries. This liver connection also comports with previously mentioned Chinese ideas.

A 2004 study, published in *Phytotherapy Research*, found that rodents prone to seizures that drank water containing skullcap extract were seizure free, while the control group continued to have seizures.[122]
Few studies have been done on American skullcap, but it looks like its calming action is mainly due to the antispasmodic constituent scutellarin, a flavonoid glycoside. Another constituent, baicalin, a flavonoid, and its active metabolite, baicalein, are known to bind to the benzodiazepine site (like Valium, a noted pharmaceutical anticonvulsant) of the GABAA receptor, a sedating neural receptor, and may, based on more recent preliminary information, be more active.

Skullcap is available in dried form as teas, capsules, tablets, and tinctures.

For a tea, start with 10 grams of the dry herb.[123] Infuse the chopped leaves, strain and drink. Use in several small doses through the day to avoid excess sedation. In tincture form, the equivalent dose is 8 tsp. Fresh herb tinctures are strongly preferred.[124]

Ginger root (*Zingiber officinale*) is a standout for aborting an episode before the pain starts. Scientists studied a combination of ginger and feverfew, given at pain onset. Two hours after treatment, 48% of patients were pain free and 34% reported only mild pain. Of the subjects, 59% of were satisfied with the herb therapy and 41% preferred it or felt it was equal to their regular medication.[125] One study looked to evaluate the efficacy of ginger in the treatment of common migraine attack in contrast to sumatriptan therapy. A double-blind randomized clinical trial enrolled 100 patients who had acute migraine without aura. The subjects were randomly allocated to receive either ginger powder or sumatriptan. Time of headache onset, severity, time interval from headache beginning to taking drug and patient self-estimation of relief was recorded for five

subsequent migraine attacks. Patient satisfaction from treatment efficacy and willingness to continue were assessed after 1 month following intervention. Two hours after using either remedy, mean headaches severity decreased significantly and the effect of ginger powder and sumatriptan was similar (statistically comparable), but adverse effects of ginger powder were less than the drug. Patient attitudes toward the results did not differ.[126]

When the first awareness of an impending attack begins (the "prodrome"), stir 2 heaping Tbs. of dry ginger powder into a glass of water. Drink it down immediately. The attack will usually recede. If it begins again a few hours later, repeat the dose.

Herbal Analgesics

Typical analgesics usually do not have much effect on aborting an acute migraine episode. Nevertheless, during the prodrome, there might be some benefit.

Willow bark *(Salix alba)* is a traditional pain reliever that contains salicin (finally metabolized to salicylic acid) and other related salicylates (phenolic glycosides that convert to salicin), which are the herbal forerunners of aspirin.[127] Salicylates, such as those in willow, relieve pain, lower fever and diminish inflammation by reducing inflammatory prostaglandins (e.g. PGE_2) by inhibiting cyclooxygenase. 131 According to AHG founder Amanda McQuade-Crawford, the bark is a popular natural choice for headaches, and sometimes works, it does not work that well.[128] She says that salicylate concentrations vary dramatically among the willow bark species, and none of them have very much. By her estimate, 1.5 gallons of tea made from willow bark with 7% salicin content is needed to achieve the pain relief of 4.5 grams of aspirin. (Of course, 4.5 grams of aspirin is about 6 doses, so the quart of tea needed for a simple dose sounds more reasonable.) The author's typical willow bark dose is 30 grams as decoction, which, at 7% salicin, would yield about 2100 mg of salicin. One study found good results with only 240 mg qd salicin in low back pain.[129]

Willow is widely used in Europe for the treatment pain. In an Israeli study from 2000, the extract was considerably more effective than a placebo in this blinded trial. A higher dose was quite a bit more effective.[130]

Aspirin thins the blood, but willow bark does not,[131] so it won't cause the bleeding problems common with aspirin. Patients don't experience the typical digestive disturbances of aspirin when using willow.

There are no special warnings for using willow. Use a tea brewed from up to 1 oz., dry weight, of the raw herb, per day, or an extract containing 240 mg total salicin. For migraine, it might be worth having the tea made in advance and frozen in dose units for fast action when needed.

Speaking of salicylates, rosemary has one of the highest known contents of salicylates.[132] This herb has long been associated with the head, brain and mind. Folklore says that rosemary helps headaches, including migraines. It probably does have an affinity for the head, and it does increase circulation, so it might help. Its association with the head lends it to improving mental clarity, memory and vision. It has historically been regarded as lifting the mood.

California Poppy aerial parts *(Eschscholtzia californica)* is powerful medicine. Originally used by Native Americans, it is distantly related to opium poppies, and contains isoquinoline alkaloids, which are known to have pain-relieving properties. This American herb has become a popular pain medicine in Europe.[133] The German Commission E lists it as an antispasmodic and sedative.

As tea, a typical dose is 3-5 tsp. of chopped dry herb, brewed, taken when necessary. As a tincture, start with 5 ml when necessary, and adjust for pain. Migraine likely will require higher doses.

Corydalis tuber *(Corydalis yanhusuo)* ("yan hu suo") is the main herb used in Chinese medicine for treating pain. It is another relative of the poppy, containing isoquinoline alkaloids, mainly tetrahydropalmatine. The raw herb is about 1% the strength of opium.[134] Like morphine, it promotes relaxation and relieves pain. While morphine is addictive and creates tolerance, tetrahydropalmatine doesn't have these problems.

Several studies in animals have confirmed the benefits.[135] [136] A 1999 animal study performed at The University of Maryland Dental School demonstrated that yan hu suo significantly reduced pain and inflammation.[137] Corydalis can make you sleepy, so don't take it while driving. Increase the dose gradually until you are familiar with the pain relieving and sedative effects. As a tea, start with ½ ounce, dry weight, of chopped herb, brewed, per day. Exceed the recommended dose only if necessary.

Ginkgo leaf can be used for migraine. Dr. James Duke, (who calls migraines "the Tyrannosaurus of headaches") recommends it.[138] He says ginkgo can improve blood flow to the brain, help maintain vascular

tone, and keep blood vessels from leaking inflammatory chemicals. In one study, he says, ginkgo lessened headaches in 80 percent of long-term migraine sufferers.

Duke points out ginkgo's ability to improve cerebral circulation lessens initial vasoconstriction and consequent blood deficiency associated with migraines. Ginkgolides block inflammation and allergic responses. So, for whatever reason, ginkgo prevents migraines for some people.[139]

In a 2013 study involving 25 patients, a combination of Ginkgo biloba terpenes phytosome, coenzyme Q 10 and vitamin B2 reduced aura duration (expressed in minutes) significantly. In general, there was a marked amelioration neurological symptoms of aura in the treated attack.[140]

Start with 60 mg of extract standardized to 24% flavoneglycosides per day, and increase in increments if migraine occurs.

Deer antler velvet is a yang tonic that strongly counteracts the constitutional tendencies of the typical migraineur. It has been used in Chinese medicine as a long-term migraine cure.[141] [142] [143]

Traditionally, antler velvet is a strong yang tonic, along the lines of ginseng, used to nourish bone marrow and blood and treat anemia, and recently this has been scientifically validated.[144] [145] The active constituents appear to be monoacetyldiglycerides, small molecules that stimulate marrow stem cells that produce blood cells.[146] In animal studies, it showed a marked increase in red blood cell production.[147] It has shown benefit in increasing heart muscle strength, stabilizing rhythm and regulating blood pressure.[148]

This remedy is strongly rejuvenating in general, and used to increase stamina, strength and endurance.[149] [150] [151] [152] [153] Other applications are fertility, for symptoms of menopause, weakness of the lower back, impotence, blurred vision, migraine, asthma, indigestion and acne.[154] [155] [156] It is often combined with rehmannia, dong quai and cinnamon.

Traditionally, velvet antler is sliced very thinly or ground to powder, of which a common dose is 3-9 grams per day.[157] It works well as a tea, but boil it by itself, as the gelatin tends to stick to the dregs of other ingredients. It may also come as liquid in glass vials or pills.

Miscellaneous Tools

Caffeine is an effective remedy that treats an acute episode, presumably by affecting vasoconstriction, especially if the migraineur is not a caffeine drinker. Use several cups of coffee or the equivalent during the prodrome.

Niacin may be preventive if used at a daily dose that stimulates a flush, presumably by facilitating regular vasodilation. Niacin's effect has not been substantiated from controlled clinical trials, but this vitamin may have beneficial effects upon migraine and tension-type headaches.[158] Its use persists in some areas of natural medicine.

Vitamin C has some history as a preventive at bowel tolerance dose (about 12 grams for most people).

Another nutrient, riboflavin (vitamin B2) is effective for prevention. A 2004 study found that 400 mg of riboflavin per day produced a dramatic reduction in migraine frequency.[159]

Breathing pure oxygen at the onset of the prodrome may abort the migraine.

As an emergency management technique, place an ice pack on head and put the patient in a warm shower or bath to normalize cranial circulation.

Yoga maintains that inverted posture (shoulder stand, etc.) can have significant long term curative benefits. The author has seen this work very well in multiple cases. Although counterintuitive, assuming an inverted posture may also abort an attack, if the patient can be persuaded to engage in acrobatics while her head feels like it’s about to explode.

Diet

In a double-blind controlled trial of the oligoantigenic diet, *The Lancet* reported on 88 children with severe frequent migraine. The diet included only one meat (lamb or chicken), one carbohydrate (rice or potato), one fruit (banana or apple), one vegetable (brassica), water and vitamin supplements. After 3 or 4 weeks, children who had only one, or no, headaches during the previous 2 weeks of the diet were reintroduced in a double-blind procedure to excluded foods one at a time to confirm that the foods were causing the migraine. Seventy percent of patients experienced migraine responses to the reintroduction of provocative foods. Intriguingly, in most of the patients in whom migraine was provoked by other triggers (flashing lights, etc.), the

migraine symptoms no longer occurred while they were on the diet. Also, associated symptoms (abdominal pain, behavior disorder, asthma, eczema) improved in most patients.[160] The paper reported the recovery of 93% of the subjects.

A much reported study from 1989, performed at the Hospital for Sick Children, in London, Egger researched the diet for epilepsy and migraine in children. Again, foods initiating symptoms were identified by systematic reintroduction of individual foods. The symptoms recurred with 42 foods, seizures recurred with 31, and most children reacted to several foods. In double-blind, placebo-controlled provocation studies, 15 of 16 children had a recurrence of symptoms, including seizures, and none recurred when placebo was given.[161]

Mansfield and others found that over 70% of migraine patients exhibited at least one reaction triggered by food. Many found relief from their symptoms on an allergy free diet. The researchers advised that food allergy testing be used to determine those patients most likely to benefit from diet therapy.[162]

Magnesium

This is not an herb, but perhaps we saved the best for last. Magnesium is a major preventive remedy and gets the author's vote for the best migraine remedy.

A dramatic link between magnesium deficiency and migraine has been established.[163] Over the last two decades, it's become clear that migraine patients have low magnesium levels between attacks, and the levels tend to be even lower during attacks.[164] [165] [166] [167] [168] [169] [170] [171] One theory is that low brain magnesium causes instability of neuronal function, which enhances the susceptibility of the brain to a migraine.[172] [173] Noise and light sensitivity, anxiety and mitral valve prolapse are strongly associated with magnesium deficiency and migraine head disorders.

In many people (perhaps 50%), oral magnesium supplementation will bring complete prevention from migraines. Daily doses prevent attacks.[174] [175] [176] [177] A German study found that 600 mg of oral magnesium daily for 12 weeks reduced the attack frequency by 41.6%.[178]

Scientists from the New York Headache Center write that they feel that a trial of oral magnesium supplementation can be recommended to a majority of migraine sufferers. Most types of magnesium supplements work well. The author prefers magnesium glycinate, as this is the least stool-loosening form.

Intravenous magnesium works well to abort a migraine.[179] [180] [181] In one study, pain reduction of 50% or more occurred within 15 minutes of infusion in 87% of the patients. In more than half the patients, at least this degree of improvement or complete relief persisted for 24 hours or more.[182] In a study from 2005, the IV magnesium worked as well as metoclopramide, a standard medication.[183] Consider it in a crisis.

Magnesium is stool loosening, so use a bowel tolerance dose (for most people, about 1200 mg per day).

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