54 Traditional Treatments for Headache

Redda Tekle Haimanot[1] · *Sheng–Yuan Yu*[2] · *K. Ravishankar*[3] · *Mario Fernando Prieto Peres*[4] · *Luiz Paulo Queiroz*[5]
[1]Addis Ababa University, Addis Ababa, Ethiopia
[2]Chinese PLA General Hospital, Beijing, People's Republic of China
[3]The Headache and Migraine Clinic, Joslok Hospital and Research Center, Lilavati Hospital and Research Center, Mumbai, India
[4]Universidade Federal de São Paulo, São Paulo, Brazil
[5]Universidade Federal de Santa Catarina, Florianópolis, Brazil

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Abstract: Traditional remedies for headache are widely practiced throughout the world. They appear to be more popular in Africa, Asia, and South America. In this chapter, the different methods used traditionally to manage headache in these parts of the world are described by experienced experts in the field. In China, acupuncture and herbs constitute the main approaches while in India Ayurveda, homeopathy, yoga, head massage, herbs, and dietary remedies are commonly used. In Africa and Ethiopia in particular, herbal medication, cauterization, and cupping with or without bloodletting are often employed to traditionally treat different type of headaches. In South America, medicinal plants appear to dominate although spiritual therapy is also getting more and more popular. The increasing use of secretion from frog has also been reported in Brazil. The chapter has also interesting descriptions of the traditional beliefs and hypotheses on the causation of headache as perceived by various cultures in different countries.

What comes out of the various experiences is the wide use of traditional remedies in headache treatment worldwide. In terms of herbal medication, it is evident that different ingredients and dosage are prescribed to different patients. Dosages are often not standardized and therefore have the potential risks of harmful side effects. In addition, the use of traditional methods to treat any symptom of headache could delay the diagnosis and management of serious conditions such as meningitis and other intracranial pathologies.

The popularity of traditional medicine is so significant that some countries particularly in Africa are working toward integrating effective and safe traditional remedies into their national health-care systems. The World Health Organization (WHO) is coordinating such efforts so that safety is not compromised when traditional remedies are popularized.

Introduction

Headache is a very common and universally recognized medical condition. The approach to its treatment reflects cultural diversity. The socioeconomic development and literacy level of a community influences on how headache is perceived and medical treatment sought. In rural societies, the symptoms of headache may be ignored or suppressed. In these communities, traditional treatment may be the only option. Moreover, despite the availability of modern medicine, many people may rely more on traditional medical practice because of its cultural acceptability, easy accessibility, and affordability.

According to World Health Organization (WHO) in some Asian and African countries, 80% of the population depends on traditional medicine for primary health care. Herbal medicines are the commonest in use and the most lucrative. Traditional medicine can treat various infections and conditions. For instance, the new antimalarial drug, artemisinin was developed from *Artemisia annua* L., a plant used in China for almost 2,000 years. Unfortunately, counterfeit, poor quality, or adulterated herbal products in international markets present serious safety threats to patients (WHO 2000). Traditional African medical practice involving herbalists, diviners, and midwives is culturally deep rooted and popular. However, within this extensive practice there are misdiagnosis of diseases and the dangers of toxic side effects. As a result, attempts are being made in some African countries to regulate and integrate traditional medicine into the national health delivery system and WHO has formulated a strategy to address the issue (WHO 2002).

This chapter deals with the different types of traditional treatments employed for headache in different parts of the world. Traditional Chinese and Indian (Ayurveda) medicines are the

most ancient and still the most widely used. A great deal of scientific research and evidence-based investigation has been carried out on Chinese traditional medicine. Indian Ayurveda needs more work in this scientific field while very little research has been published on African and South American traditional medicine for headache. The five authors' chapter will present overviews of Chinese, Indian, African, and South American traditional treatments employed for headache. The Chinese approach of using acupuncture and herbs is described together with some insight into our modern understanding of their mechanism of action.

Chinese Traditional Treatments

Although medications remain the mainstay therapy for headache, the patients also continue to suffer discomfort and interference with activities of daily life. Moreover, adverse effects of medications may lead to limitations of drug therapy. Acupuncture and Chinese herbs are Chinese traditional medicine for treating headaches that have been widely used in clinical practice for over 3,000 years. This chapter focuses on the history and traditional Chinese theory, modern mechanism, and clinical practice of acupuncture and Chinese herbs, providing some information about their state and challenge.

Acupuncture

History and Traditional Chinese Theory of Acupuncture

Acupuncture and Chinese herbal medicine comprise a system of health care that originated in China more than 3,000 years ago. Traditional Chinese medicine is based on the Chinese concept of energy balancing where there are two forces within the body that require balance in order to achieve health. The two forces are commonly referred to as *Yin* (negative) and *Yang* (positive). The aim of treatment with acupuncture is to restore the body systems to balance between *Yin* and *Yang* via inserting acupuncture needles to influence the flow of *QI* (pronounced "chee"), which circulates and flow through 12 organs and 12 meridians of the body. The 359 classic acupoints are distributed along these meridians (Ernst 2006). The *QI* circulates within the deeper organs and connects to the superficial skin via acupoints. Therefore, the stimulation of specific acupoints can influence flow of *QI* in the meridians and in the organs. In the state of a normal healthy body, a balance exists between these organs. When injury, disease, emotional trauma, or infection occurs, the natural flow of *QI* may be affected and altered. If *QI* is blocked, it would result in pain and inflammation. The stimulation of relevant acupoints is supposed to dissolve *QI* blockage.

Modern Views on the Mechanism of Acupuncture

Modern medical research suggests that the mechanism of acupuncture treatment of headache is multifaceted and multi-leveled and includes the following. (1) Acupuncture has a good analgesic effect. It may increase pain thresholds by regulating the secretion of endogenous opioids that play a role in analgesic effects. It has been determined that endogenous opioids,

such as endorphins, enkephalin, and dynorphin, can bind to opiate receptors in brain and nerve endings to cause analgesic effects and regulate human emotions (Takeshige et al. 1992; Guyton and Hall 2001). Some studies have shown that acupuncture could increase the level of enkephalin and dynorphin in plasma (Yu et al. 1997) and the central nervous system (Chen et al. 1996; Fu 2000). The enhanced enkephalin was correlated with increased pain threshold and the block of pain transmission. It has been observed that the increased enkephalin in the reticular paragigantocellularis (RPGC) during acupuncture could bind to opiate receptors at the endings of nociceptive primary afferents, suppress the release of substance P (SP) from these terminals, and result in a block of pain transmission (Yu et al. 1985; Raj 1986). Besides stimulation of RPGC in rats by acupuncture, there is also an increase in beta endorphin and leucine encephalin secretion, which play an important role in acupuncture analgesia (Zhao 1995). (2) Acupuncture can improve oxygen metabolism and blood flow in the brain. Single photon emission computed tomography scan (SPECT), brain perfusion imaging, and magnetoencephalography have shown that during stimulation of some acupoints, blood flow in the contralateral cerebral cortex and thalamus, ipsilateral basal ganglia, bilateral cerebellum, and also local activities of brain function have a trend of increase. This suggests that acupuncture can have a good effect on regulation of blood flow in the cerebral cortex (Wang and Jia 1996; Dhond et al. 2007). Migraine often causes cerebral vasomotor dysfunction. Acupuncture can improve cerebral blood flow and change the blood supply to brain tissue, which may be the role of acupuncture in helping to alleviate migraine. (3) Acupuncture can improve metabolic disorder. It has been observed that acupuncture application causes changes in the concentrations of K^+, Na^+, Mg^{2+}, and Ca^{2+} in the neurons (Deng 1995; Demirkaya et al. 2001). The recent studies showed that the biochemical changes are associated with the pathogenesis of migraine. Mg^{2+} deficiency has been implicated in the pathogenesis of migraine and tension-type headache (Altura and Altura 2001; Demirkaya et al. 2001; Zhao and Stillman 2003). During treatment of migraine attacks with 1 g intravenous magnesium sulfate, the pain disappeared in 13 patients (86.6%), diminished in 2 patients (13.4%), and accompanying symptoms disappeared in all 15 patients (100%) (Demirkaya et al. 2001). (4) Acupuncture has a good anti-inflammatory effect (Yu et al. 1995; Yu et al. 1996). A study has shown that acupuncture could play a role in modulation of neurogenic inflammation by release of endorphins, which exert an anti-inflammatory effect and analgesia (Ceccherelli et al. 2002). (5) Affecting the immune system. It has been determined that the levels of interleucin-2, interferon gamma, and the activity of natural killer cells of the spleen are increased by applied acupuncture (Yu et al. 1997; Yu et al. 1998).

Clinical Practice of Acupuncture

Acupuncture has been widely used in treating headaches around the world, but its effectiveness is still controversial. Many trials and numerous systematic reviews of acupuncture have recently become available. A systematic review (Melchart et al. 2002) by the Cochrane Collaborative published in 2002 identified 16 randomized studies on true acupuncture and migraine. In 11 of 16 migraine studies, the effectiveness of true acupuncture was compared with sham acupuncture, including number of days with headache, frequency of attacks, and attack intensity. Most studies reported differences in favor of acupuncture for at least one outcome. In five studies, the effects of acupuncture were significantly better than placebo. Three studies showed trends in favor of acupuncture, while two studies found no significant difference

between true and sham acupuncture. The remaining one study was inconclusive due to the high dropout rate during the study. The author's overall conclusion about that the majority of the migraine studies showed at least a trend in favor of true acupuncture. This review suggests the effectiveness of acupuncture for treating headaches needed further study. A recent systematic review, less available and accessible in the West (Sun and Gan 2008), demonstrated that acupuncture is an effective treatment for headache. Specifically, acupuncture is superior to sham with a significantly higher response rate in patients with migraine and tension-type headache, and a significantly reduced headache intensity at late follow-up. Interestingly, subgroup analysis found that acupuncture is more effective in reducing headache intensity than sham in tension-type headache, but it did not provide the same positive result for migraine. When compared with pharmacological and waiting list options, acupuncture was also more effective for reducing headache intensity and frequency. Moreover, the Cochrane review of 22 trials in 2009 (Linde et al. 2009) showed acupuncture is effective in the prophylaxis of migraine. Six trials compared acupuncture to no prophylactic treatment or routine care only. After 3–4 months, patients receiving acupuncture had higher response rates and fewer headaches. Four trials compared acupuncture to proven prophylactic drug treatment. The authors conclude that acupuncture is at least as effective as, or possibly more effective than, prophylactic drug treatment, and has fewer adverse effects and that acupuncture should be considered a treatment option for patients willing to undergo this treatment. However, there are also some opposite opinions. For example, a review of 57 trials in Japanese from 1978 to 2006 showed that there is limited evidence that acupuncture is more effective than no treatment, and inconclusive evidence that trigger point acupuncture is more effective than placebo, sham acupuncture, or standard care (Itoh et al. 2007). Furthermore, a recent systematic review with meta-analysis of randomized, controlled trials suggested that acupuncture compared with sham for tension-type headache has limited efficacy for the reduction of headache frequency (Davis et al. 2008). Researchers have noted that the results of investigations of acupuncture as a treatment for migraine are difficult to interpret. Many researchers have pointed out that some aspects of the studies need to be further improved, including complete understanding of the physiological effects of acupuncture, identification of suitable sham or placebo treatments, standardization of acupoint selection and treatment course among randomized, clear adequacy of acupuncture "dose," the effective blinding of participants, more scientific researches and international cooperation, and so on (Davis et al. 2008; Kelly 2009).

Chinese Herbs

Basics of Traditional Chinese Medicine

Traditional Chinese medicine has been a frequent therapy for headache for thousands of years. The treatment of Chinese medicine is based on *Yin-Yang* and *Zang-Fu* theories. Chinese herbs are used to balance the body. For instance, when the cause of headache is disharmony of the liver system (diagnosed according to Chinese medicine), the principle of treatment is to balance the flow of liver *QI*. The Chinese herbs *Chuan gong*, *Tian Ma*, *Gou Teng*, *Du Li* in combination with other herbs are commonly used (Song and Hao 2001). The prescription is based on specific symptoms of each patient as well as the experience of each practitioner. The duration of Chinese herbal treatment is usually 1–2 months and also depends on individual patient's condition. Chinese herbal medicine is a traditional Chinese therapy for headache and

is very powerful in balancing the body. It has been observed that Chinese herbs can significantly reduce the pain intensity, shorten the time of headache attacks, reduce the frequency of the headache, and prevent the attack of headache.

The Mechanism of Traditional Chinese Herbs

The mechanism of action of traditional Chinese herbs on headache has not been worked out, although limited studies show it perhaps includes the following.

Regulating Neurotransmitters

Tou Feng capsule can block the decreased concentration of 5-HT, norepinephrine (NE), and dopamine (DA) in the brain of a rat migraine model, to keep the level of neurotransmitters up, and improve blood flow in the brain (Yao et al. 2002). Some studies showed that *Xue Fu Zhu Yu Tang* (Li 2006), *Headache Power* (Song and Hao 2001), and *oral compound Gastrodia* (Lu et al. 2004) can prolong blood clotting time, increase pain threshold, and result in relieving migraine symptoms.

Regulating Neuropeptide

It has been observed that in a rat model of migraine using nitroglycerin, *Tong Xin Luo Capsule* can downregulate expression of calcitonin gene-related peptide (CGRP) mRNA in brainstem and trigeminal ganglion (Yang et al. 2006) and *Tou Feng capsule* decreases CGRP and histamine in rat serum (Yao et al. 2001). CGRP is known to correlate with headache.

Regulating Expression of C-Fos and C-Jun

Several recent trails show that *Tong Feng Yin* inhibits the increased expression of c-fos and c-jun (Ren et al. 2000), and *Xiao Yao Di Bi Liquid* blocks the increased expression of c-fos in rat brainstem and hypothalamus in a model of migraine using nitroglycerin (Hu et al. 2004).

Regulating Function of Blood Vessel

Da Chuan Gong Wan, which is commonly used to treat headache in China, can inhibit excessive dilation of cerebral blood vessels caused by nitrous oxide (NO) (Yang et al. 2005).

Clinical Practice of Traditional Chinese Herbs

The traditional Chinese herbal medicine for headache treatment can be divided into oral drug (i.e., single herb and many herbs together) and topical drug (e.g., herbal fumigation and injecting to acupoints), but many herbs together have been mainly used in clinical practice. For example, it is reported that 32 cases of migraine were treated with the mixture *Yang Xue Chu Feng Tong Luo Tang* (Huang et al. 2003), which consists of: *Dang Gui* and *Ge Gen*, 15 g each, *Bai Shao*, *Chuan Xiong*, *Qiang Huo*, and *Tu Yuan*, 30 g each, *Sheng Di*, 20 g, *Jing Jie*, *Fang Feng*, *Bai Zhi*, *Tao Ren*, *Hong Hua*, and *Di Long*, 10 g each, and *Xi Xin*, 6 g. If there was accompanying nausea and vomiting, *Ban Xia* and *Wu Zhu Yu* were added. If there were heart palpitations and insomnia, *Shi Chang Pu* and stir-fried *Suan Zao Ren* were added. If there was scanty *QI*, bodily vacuity, and lack of strength, *Huang Qi* and *Dang Shen* were added. One packet of these medicinals was decocted in water and administered per day in two divided doses, morning and evening. Ten days equaled one course of treatment, and outcomes were analyzed after three

successive courses (i.e., *at* 30 days). Cure was defined as complete disappearance of the headaches and all accompanying symptoms with no recurrence within half a year. Marked effect was defined as basic disappearance of headaches and accompanying symptoms with one to two recurrences. Improvement was defined as a decrease in the severity of the headaches and three to five recurrences. No effect meant that there was no improvement in the headache. Based on these criteria, 24 cases were judged cured, 6 cases showed a marked effect and the duration of the headache recurrences was short, and 2 cases improved. Therefore, the author concluded that those herbs can effectively treat migraine.

Many traditional Chinese medicine products have now been made from the traditional Chinese herbs as raw materials, in order that they can be easily taken. The commonly used products are *Zhen Tian capsule*, *Tian Shu capsule*, *Tou Tong Ning capsule*, *Yang Xue Qing Nao granules*, *Tong Tian oral liquid*, and so on. One study randomly divided 100 patients with tension-type headache into a treatment group (50 cases) treated with *Eprisome and Tian Shu capsule*, and a control group (50 cases) treated with *Tian Shu capsule*, for 2 weeks. Cure was defined as no recurrence of headache and disappearance of accompanying symptoms of headache. Marked effect was defined as frequency of headache reduced more than 70% and the duration of time was markedly shorted. Effect was defined as frequency of headache reduced to 35% $\sim$ 69% and the duration of time was shortened. NO effect was defined as frequency of headache reduced less than 35%. A total effectiveness rate included cure rate, marked effect rate, and effect rate. Based on these criteria, the total effectiveness rate of the treatment group was 91.67% and the control group 76.60%. There was significant difference ($P < 0.05$) between treatment group and control group (Zhang et al. 2008). It has also been observed that *Tou Tong Ning* capsule significantly decreases the frequency and the duration of time of migraine attacks, comparing with placebo (Ren et al. 2009). Moreover, there have been a lot of clinical observations on traditional Chinese medicine products treating headaches, most of which showed they are effective.

There has not been enough evidence to confirm the efficiency of traditional Chinese herbs in headache, because the present clinical trials have often been done (1) lacking uniform criteria of diagnosis and clinical evaluation; (2) lacking standard dosage; (3) lacking scientific research design and systematic prospective study; (4) with insufficient samples. Most of the trials used the diagnostic system of traditional Chinese medicine, which is very different from the classification and diagnostic criteria by IHS. Traditional Chinese medicine focuses on individuation of treatment, i.e., the different ingredients and their dosages for different patients.

Indian Traditional Treatment

Traditional treatments are often used along with conventional treatment in the treatment of migraine and tension-type headache. Pharmacological treatment of migraine is complex, and there is no ideal treatment or universally agreed upon guideline. Not all patients respond to the same medications, many develop unacceptable side effects and some are reluctant to take medications. Overuse of acute medications can lead to "medication overuse headache" (MOH) further complicating management strategies. These concerns force patients who have tried out conventional headache therapies to explore complementary or alternative or traditional therapies (Rossi et al. 2005; Evans and Taylor 2006).

The term "Traditional Medicine" or "Alternative Medicine" means any form of medicine that is outside the mainstream of Western medicine or allopathy or orthodox medicine and

refers to a broad set of health-care practices that are not integrated into the dominant health-care system. (WHO 2000) The World Health Organization (WHO) defines traditional medicine as "the health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral-based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses or maintain well-being" (WHO 2000). Practices of traditional medicine vary greatly from country to country, and from region to region and are influenced by factors such as history, culture, and attitudes.

Traditional medicine has not been officially recognized in many countries. Consequently, education, training, and research in this area have not received due attention and support. Further scientific research is needed to provide additional evidence of its safety and efficacy. The lack of research data is mainly due to the absence of research methodology for evaluating traditional medicine. Efficacy assessment of traditional medicine may be quite different from conventional medicine.

Traditional treatment looks at most problems as the result of complex mind–body disharmonies. A common traditional treatment method utilized is Herbal. Medicinal herbs have been used as "nutritional supplements" with special properties. Practitioners of traditional treatment also use a range of physical approaches that range from acupuncture to massage or soft tissue manipulation. Each traditional healer has ethnically based sets of treatment for enhancing the outcome and for reestablishing proper nerve function, proper blood flow, and proper structural function. Traditional healers also use psychotherapeutic approaches.

Complementary and alternative medicine (CAM) is often perceived by the public to be more helpful than conventional care for the treatment of headache. In many regions, there is a notion that allopathic medicines taken on a long-term basis are harmful and have side effects. As a result many patients resort to complementary and alternative therapies like acupuncture, biofeedback therapy, relaxation therapy, herbal remedies, and vitamin or mineral supplementation. Plants have been employed as a herbal remedy for migraine treatment and prophylaxis; examples include Feverfew (*Tanacetum parthenium*) and Butterbur (*Petasites hybridus*). Recent studies have demonstrated the effectiveness of acupuncture and yoga in the reduction of migraine headache (Mauskop 2008; Gaul et al. 2009).

Headache patients in India are exposed to the following traditional treatments: Ayurveda, Homeopathy, Yoga, Herbs, Diets, and Massage. They are detailed below (Ravishankar 2004).

Ayurveda

Ayurveda is a traditional medical system used by many in India. Ayurveda is the complete balance of the body, mind, and spirit, including emotions and psychology. Ayurveda includes in its considerations longevity, rejuvenation, and self- realization therapies through herbs, diet, exercise, yoga, aromas, tantras, mantras, and meditation. The hypothesis is that headache usually arises from a stomach disturbance. A better acid–alkali balance in the body may be responsible for reducing the frequency of migraine. There is a close correlation between the symptoms of migraine with those of Amla-pitta of Ayurveda (state of acid–alkali imbalance in the body) causing symptoms such as: brahma (confusion), moorcha (fainting), aruchi (anorexia), aalasya (fatigue), chardi (vomiting), prasek (nausea), mukhmadhurya (sweetness in the mouth), and shiroruja (headache). So the correlation between the cause and symptoms of Amla-pitta of Ayurveda match the current diagnostic criteria of migraine.

Prakash et al. (2006) carried out a study with a uniform ayurvedic treatment protocol (AyTP) comprising five ayurvedic medicines. A uniform treatment protocol was first designed and the same was offered to all migraine patients. Generally, the patients who visited the clinics for AyTP were not satisfied with conventional therapy. Out of 406 patients who were offered this protocol, 204 patients completed 90 days of this treatment. Complete disappearance of headache and associated symptoms at completion of AyTP was seen in 72 (35.2%). In 144 (70.5%) of patients, the marked reduction of migraine frequency and pain intensity observed maybe because of AyTP.

A combination of these five Ayurvedic medicines can markedly reduce the migraine frequency in some migraine patients. The combination of Narikel Lavan, Sootashekhara Rasa, Sitopaladi Churna, Rason Vati, and Godanti Mishran in conjunction with regulated lifestyle and diet may have restored the acid–alkali balance, and restored the functioning of the gastrointestinal system. The herbo-mineral ayurvedic medicines used for migraine treatment contained bhasma of silver, copper, and mercury and many immunomodulatory medicinal herbs, namely, *Allium sativum*, *Eclipta alba*, *Cinnmomum zeylanica*, *Zingiber officinalis*, *Piper longum*, *Piper nigrum*, *Bambusa arumdinaceae*, *Ellettaria cardamomum* and *Cinnamomum cassia*, *Ferula northrax*, *Citrus acida*, etc. Some ingredients used for medicine preparations are moderate to severely toxic in the raw form (ashodhit). However, intricate processing (shodhan) converts these toxic materials to complex mineral forms that are nontoxic but improper processing/manufacturing of ayurvedic medicines may result in severe toxicity. Hence, the safety profile of the combined formulations was first established in animal models (Prakash et al. 2006).

Though this was an open-labeled study, it does allow a conclusion to be drawn about the efficacy of Ayurvedic treatment in migraine. However, to ascertain the real effectiveness of Ayurvedic treatment protocols, a properly controlled clinical trial with a larger patient population is required. Recent studies have indicated that Ayurvedic medicines can be effective in treatment of tension-type headache also.

Homeopathy

For some people who find that prescription treatment for headaches is not effective enough or that the side effects are too uncomfortable to allow for treatment to continue, homeopathic medicine may be one option. It is considered an alternative treatment to conventional drugs and medications. It is thought to be less likely to cause side effects in comparison with prescription strength medications (Ravishankar 2004).

Homeopathy is based on the concept of using extremely small amounts of substances, which in large amounts can induce the same symptoms that are being treated. Homeopathy is meant to enhance the body's natural healing and encourages your body's own ability to heal itself. Homeopathic treatment aims to address each person uniquely, rather than simply recommending one specific treatment for everyone who suffers from headaches, for example. Homeopathy also abides by the ethos that a person should be treated as a whole and treatments are therefore likely to be multifaceted (Headache Homeopathy website).

Homeopathic treatment uses diluted quantities of various plant, mineral, or animal substances to focus on the root cause of an illness. Treatment is thought to increase the production of endorphins, which are the body's natural painkillers. Treatment may be aimed at various

areas such as stress or allergies as well as symptoms occurring during an attack. Homeopathic medicines are available over the counter but it is preferable to receive guidance from a homeopathic practitioner. Dosage and frequency of the preparations will vary and you may use only one medicine or a combination. Medications may be used early on when headache pain initially begins, and also daily for long-term prevention.

Homeopathy is rarely a cure or quick fix although some people believe headaches can stop completely after appropriate use of homeopathy. There are approximately 250 remedies to choose from for migraine headache in homeopathy. Medicines may require some time to take effect and are intended to manage and relieve headache pain. Homeopathic medications can also have contraindications with prescription medications, so it is crucial to discuss this after you combine different treatments, to ensure you do not compromise your health. Although homeopathic preparations are considered quite safe, reactions such as a skin rash can occur and so caution should still be used.

Yoga

Through various yogic techniques, a person can avoid and control headaches. Yoga postures and pranayama can help alleviate the pain of headache by releasing tension and stress. A regular routine of Yoga exercise, breathing techniques, and meditation can help to prevent chronic headache or reduce their severity.

Yoga is a complete science of life that originated in India many thousands of years ago. Yoga is one of the six orthodox systems of Indian Philosophy. Yoga means "union" in Sanskrit, the classical language of India. Yoga is an ancient practice that helps create a sense of union in body, mind, and spirit. Yoga provides a holistic approach to lifestyle.

The exercises (action) of Yoga are designed to put pressure on the glandular systems of the body, thereby increasing its efficiency and total health. It strengthens the spinal cord, energizes the inner cells, and activates the whole nervous system. "Bhramri Pranayam" is the most efficient Yoga practice to reduce headache. Some of the Yoga poses that are greatly suggested in such cases include suryanamaskar, bhujanga asana, pawan muktasana, sirsasana, kapalabhati, shitali pranayama, savasana, jalandhar banha, and kunjal jal neti. Inverted postures increase oxygen to the brain and can also reduce headache. Neck exercises play a vital role in curing headache. Yoga practice helps to ease tension, increase flexibility, and tone the muscles. Anuloma Viloma is the special breathing technique that cures headache to a great extent. Tension headaches, also categorized as muscle contraction, often can be alleviated through deep breathing and relaxation asanas, especially while lying down in a quiet place. Exercises that stretch the muscles can release the tension that often causes headaches (John et al. 2007).

There are many ways in which yoga benefits the body. It improves muscle tone, flexibility, strength and stamina, improves circulation, and stimulates the immune system. Yoga decreases the metabolic rate, lowers heart rate, and reduces the workload of the heart. Yoga lowers levels of chemicals associated with stress. It decreases high blood pressure, reduces stress and tension, anxiety, depression, irritability, and improves concentration. Yoga also helps to increase self-awareness, enabling you to address physical symptoms before they become severe.

John et al. (2007) conducted a randomized controlled trial that evaluated the effectiveness of yoga on migraine headache and found that yoga had beneficial effects on various migraine parameters. They arrived at the preliminary conclusion that integrated yoga therapy could be an additional treatment for migraine.

Herbs

The following herbs are found easily in India and are used for headache relief:

1. Betel (*Piper betle*): Betel leaves have analgesic and cooling properties.
2. Clove (*Syzygium aromaticum*): The aroma of the clove has a headache-allaying effect. It can soothe the nerves and bring it back to a pacified state.
3. Garlic (*Allium sativum*): Garlic has almost miraculous properties in relieving headaches, of whatever type they are. Their juice slowly permeates the head region and acts as a painkiller.
4. Ginger (*Zingiber officinale*): Ginger has painkilling properties. Due to this property, it is used as an external application on the affected head region. This gives relief from the headache.

Dietary Treatments

When there is a headache, consuming a sweet preparation or even a spoonful of sugar helps. In many places in India, "Jalebi" and milk are given to prevent morning headaches. Milk and ghee are also beneficial in headaches. Preferably, the milk of a cow should be warmed and had when there is a headache. Rice is the preferred carbohydrate to be taken in times of headache. The water left after cooking the rice should be had when it is warm, with a dash of ghee added in it. Spicy and fried foods are to be avoided when there is a headache.

Head Massage

Head massage is one of the traditional methods in India of using oils to massage your neck, shoulders, scalp, and face to get rid of headache. The Indian head massage headache treatment takes care of the mind, body, and the spirit. In addition to soothing your condition of acute pain in the head, Indian massage therapy is said to help by reinstalling or repairing the movements of your joints, by enhancing the supply of oxygen and glucose to your brain, by improving the circulation of cerebrospinal fluid, by relieving muscle tension, and by stimulating the process of blood circulation in the body. If you use oil as part of the massage, it helps to calm your nervous system too. Indian head massage headache treatment is done following particular massage methods like squeezing, rubbing, gently tapping, and prodding (Massage Therapy for Headache website).

If you are suffering from sinus headache, then the Indian head massage headache treatment will work upon your acupressure points to allay the sinus pressure, stimulate blood circulation, and enhance your vigilance. Indian head massage treatment for headache is suitable for people of all age and sex. Only those who have complaints of degenerative spinal disorders, osteoporosis, and arthritis should not be allowed to go through head massage treatment for headache. If the steps of Indian massage treatment for headache are rightly followed, the outcome is sure to be effective.

Conclusion

Comprehensive headache management should ideally include both conventional medicine and complementary or alternative or traditional medicine (CAM) – see Chap. 52. Traditional

treatments have been tried out mostly in migraine patients. CAM is used widely in tertiary headache care as adjectives or alternatives. The goal is to find effective means to reduce, by at least 50%, the number of headaches, their intensity or their duration, while improving the functional quality of life (Rossi et al. 2005; Evans and Taylor 2006).

The use of CAM is based on patient preference or in those who respond poorly to conventional drugs or who have contraindications to drugs. CAM or "Herbal remedies" are considered as natural and safe but some have potentially harmful side effects. It is best for pregnant women to avoid all traditional treatments except magnesium. Most traditional treatments however are not scientifically studied.

Data about CAM use in different countries show different patterns (WHO 2000). There are five commonly utilized CAM medications for headache prevention. The following traditional treatment options used in other countries, are not commonly used in India – biofeedback, aromatherapy, chiropractic manipulation, hypnosis, craniosacral manipulation, Feverfew, Petasites, magnesium, CoQ10. Factors such as age, gender, education, headache severity, disability, chronicity of headache, and attitude can all influence CAM treatment. Regional differences in income and health-care systems, especially the willingness of health insurance to reimburse the cost of such treatment influence the use of CAM therapies. In difficult or refractory headache situations, one should take advantage of all resources. CAM therapies should be incorporated into medical education. Good trials are needed. Ideally one should combine both conventional treatment and traditional treatment.

Traditional Treatments in Africa with Emphasis on Ethiopia

Traditional or ethnomedical practice is widespread in African countries. For instance, in South Africa between 70% and 80% of the population use the traditional medical sector as their first contact for advice and for treatment of health concern (Kasilo 2000).

A survey in Ethiopia has shown that 80% of Ethiopians use traditional remedies as a primary source of health care (Kassaye et al. 2006). Traditional beliefs are so culturally entrenched that 14% of Ethiopian Jewish migrants visiting a mental health center in Israel attributed their psychiatric and other physical problems to a type of spirit possession (Arieli and Aycheks 1994). There are also evidences that Ethiopian immigrants in Israel continue to perform traditional bloodletting in their new country of residency. Their common reason for the procedure was that the blood was too dark or impure due to diseases such as headache, "feeling of pressure in the blood," fainting, weakness, or nausea (Tandeter et al. 2001).

The majority of African populations live in rural areas where health-care coverage is low. The recourse of rural people to traditional treatment is because it is culturally accepted, easily accessible, and affordable. The lack of knowledge and exposure to modern treatment methods contributes to the popularity of traditional medical practice.

Traditional treatment is influenced by the way the causation of illness is perceived in the cultural and social context of the country or the society. In Ethiopia, it is believed that health is a state of equilibrium within the body and between the body and the outside. Excess heat, cold, drink, worms, and sun can disrupt this equilibrium and cause disease. For instance, excess sun is thought to cause headache, eye disease, earache, and other conditions (Hodes 1997). Vecchiato has identified two broad etiological domains: naturalistic and magico-religious. The naturalistic illness results from external factors, contagion, interpersonal conflict, or personal excesses while the magico-religious domain illness is attributed to God (Allah),

nature, demonic spirits, ancestral ghosts, magical forces (evil eye, sorcery, and curses), and breech of social taboos or personal vows (Vecchiato 1993). As a consequence, two types of traditional healers are easily identified. These are the diviner and the herbalist. There is often an overlap whereby an herbalist may prescribe his/her recipe combined with spiritual mysticism.

African traditional medical skills and practitioners or healers are very diverse in their skills and therapeutic approaches, which range from the use of herbal medication to that of spirituality with magical religious orientation. The healers learn their trade from a family member (parents, uncle, etc.), or through apprenticeship under a well-known practitioner in the community. There are also those that claim to have become healers through a spiritual calling. The mean age of a traditional healer in Central Ethiopia was 53.7 years and the majority practiced their trade on a part-time basis (Teferi and Hahn 2002).

Ethnomedical practice in Ethiopia takes different forms depending on the type of the sickness and how the problem is perceived. The specialization of the healers is also quite diverse. They include tooth extractors, uvula cutters, cuppers, amulet writers, those that perform cauterization, exorcists, and seers (Hodes 1997).

Modalities of Traditional Treatment

In Africa, different methods are used in traditional treatment. The modalities of ethnomedical approaches differ from country to country and even within the same country the practices may vary depending on geography, ethnicity, and other sociocultural environmental factors.

Besides traditional bonesetters and birth attendants, the commonest modality of traditional medical practice is ethnobotanical remedies using medicinal plants. In Africa, the rural people and urban poor very much rely on the use of herbal medicine. These are prescribed and provided by herbalists but may be self-administered. The predominant dosage forms are liquid preparations. The deep-rooted cultural belief in the ethnomedical practice is so strong that in many places the traditional healers and the remedies they offer may be preferred over modern medicines and procedures. The herbalist that collects and administers the medicinal plants is treated with respect by the community. He or she in turn preserves his/her special status in the community through secrecy of his/her art and the creation of an environment of mysticism.

Mental illness traditionally is attributed to supernatural forces such as evil spirits that enter a person's body or the shadow cast by an evil eye (Alem and Argaw 1993). Most patients go to priests, magicians, sorcerers, and traditional healers/diviners (Giel and Van Luij 1968; Alem and Argaw 1993). Holy spring water is used extensively to treat patients with psychosocial or psychiatric problem. Drinking and bathing in holy waters together with prayers by priests is often used for a constellation of illness both physical and mental.

Children with throat and respiratory infection or simple febrile illness may undergo uvulectomy performed by a traditional healer in unsterile conditions. This approach has often been complicated by sepsis or tetanus.

Amulets, made of strips of parchment on which biblical or koranic verses are written in ink and rolled up in leather bags are used both prophylactically and therapeutically against evil spirits, bearers of the evil eye, and sorcerers. Epilepsy is commonly believed by rural people to be caused by evil spirit or contagion while touching a seizing person (Tekle-Haimanot et al. 1991). Hence, the wearing of amulets by persons with epilepsy is quite common.

Cauterization is employed with the belief that intense heat destroys the disease-causing substance. It is employed to treat different painful conditions including chest or back pain, headache, and abdominal cramps.

Cupping with or without bloodletting is also practiced with the belief that the procedure will extract "bad unhealthy blood." The procedure is again used in painful conditions as in cauterization.

Bloodletting is commonly practiced in some parts of Ethiopia to treat headache, fever, stiff neck, or abdominal pain. The bloodletting is carried out with an incision on the forearm. In rural areas, cuts and bleeding from the eyelids is used as the treatment of choice for eye diseases like conjunctivitis.

Role of Ethnomedical Practice in the Treatment of Headache

In the rural setting, traditional remedies are commonly used in the treatment of headaches in Africa in general and in Ethiopia in particular. The simplistic traditional approach of treating headache is the application of a tight cotton scarf around the head. Among people living in "enset" (false banana) growing areas in Ethiopia, the cotton scarf is replaced by strong "enset" fibers. The application of butter over the scalp and the consumption of coffee are other forms of self-medications that are applied to treat headache.

Herbalists use the leaves of different plants to treat headaches. The common method of administration of the remedy is in the form of sniffing of a liquid extract via the respiratory system. In South Africa, the tea of the dried leaves of Lion tail (Leonotis and Leonuris) is taken to treat headache. Some of the herbs used to treat headache in Ethiopia include *Mentha pipertia*, *Nigella sativa* (Black seed), *Ocimum basilicum* (Basil), and *Rata chalepensis*.

The approach to treat headache of the migraine character is more dramatic and involves experts. One practice is the use of cautery over the site of the throbbing headache. It is carried out with red-hot charcoal, hot iron, or a burning stick.

Cupping is also used in persistent chronic headache and migraine in particular. In the rural area, bleeding is usually made on the temple and cupping is performed using a cow horn with a hole at the end where the suction is applied by the practitioner (Pankhurst 1965). When it is combined with bloodletting ("bleed-cupping"), in some African cultures herbal ointment is applied with follow-up herbal drugs. Some cultures also rub hot herbal ointment across the patient's eyelids to cure the headache.

Conclusion

The traditional treatment of headache in the African culture is quite varied. It may be as simple as drinking coffee or the tying a tight scarf around the head or as invasive as cauterization, bleed-cupping or bloodletting. The use of these traditional methods of treatment could delay the diagnosis and management of serious conditions such as meningitis and other intracranial pathologies. Moreover there are studies to show that traditional medicines carry the risk of dangerous toxicity. A study in South Africa demonstrated that 18% of all acute poisonings were due to traditional medicines, most (86.6%) of all death from acute poisoning

were as a result of poisoning with traditional medicines and the traditional healer is the main source (Joubert and Sabeta 1982). However, the position that traditional medical practitioners occupy in African societies is so influential and important that efforts are being made to involve them in the national health-care system through training and evaluation of effective remedies.

Traditional Treatments for Headaches in South America

Headache treatment can be preventive and acute; also pharmacological and non-pharmacological (Lipton et al. 2007). A non-pharmacological approach is frequently used by patients (Dodick and Silberstein 2007), not always prescribed or initiated by their physicians. Self-initiated treatment or coping strategies depend mainly on the patients' cultural background.

Evidence-based medicine is biased toward available randomized clinical trials (RCTs) and generally focuses on medication. Less evidence is available in medicine for non-pharmacological approaches.

In South America, many coping strategies and natural, cultural-based treatments are available. Some of them are linked to spiritual practices and/or religious activities.

South America is a predominantly catholic continent. In 2007, the Brazilian population was surveyed regarding religious affiliation. 64% were catholics, 17% pentecostals, 5% non-pentecostals, and 3% spiritist. Most of them believe in God (97%), in miracles (87%), in life after death (60%), and many in reincarnation (44%) (Serafim 2007).

Limited data are available regarding traditional treatments used in Latin America; we describe in this chapter the most common practices seen in our environment.

Carod-Artal and Vázquez-Cabrera (2008) have studied headache and migraine treatments in native cultures in Central and South America. Three different tribes were studied. An anthropological field study was conducted with Tzeltal Maya (Mexico), Kamayurá (Brazil), and Uru-Chipaya (Bolivia) American Indians. Migraine is called *yaxti-wanjol chawaj* by Tzeltal shamans. They wash the head of the patient with an herbal solution to treat headache. The boiled leaves of a shrub called *payté wamal* (*Tagetes nelsonii*) were used to relieve migraine. Migraine is called "monkey's disease" by Kamayurá natives. The disease is supposed to be originated by the revenge of the killed monkey's spirit, striking to Kamayurá hunter on his head. It is treated with an herbal infusion (*Serjania* sp.) applied in the eyes of the patient. Migraine is called *eskeclamix* by Uru-Chipaya people; and is treated by drinking the *cañahua* plant (*Chenopodium pallidicaule*) boiled with water. The patient's head may also be washed with shaman's fermented urine.

In Brazil, specially common and typical in the North-Northeast culture, a treatment called "garrafada" is used for several disorders, including headaches and migraine. Herbs are prepared with diverse (and not very well known) tree barks syrup.

Regarding use of homemade remedies, Santos et al. carried out a study evaluating 105 teachers of primary schools on the outskirts of Belo Horizonte, Brazil. Interestingly, 69 (65.7%) thought that certain diseases could be treated with homemade remedies and 54 (78.3%) were able to associate a particular disease with a particular medicinal plant. Lemon balm (*Melissa officinalis*) and Macela flower (*Achyrocline satureioides*) were pointed as healing plants for headaches (Santos et al. 1995). Another study conducted in 2009 surveyed medicinal plants used by academics of a health school in Paraná, Brazil. Results showed that 73% of

respondents use medicinal plants. From these, 49% stated they use it for digestive disorders and 24.3% for nervous system disorders (including headache, stress, and anxiety). Macela flower (*Achyrocline satureioides*), Chamomile (*Matricaria chamomilla*), Lemon balm (*Melissa officinalis*), and Espinheira-santa (*Maytenus ilicifolia*) were used for headaches (Aquino Rutkanskis and Cruz-Silva 2009).

In 2006, 100 patients from two public health units in Espírito Santo, Brazil were interviewed concerning medicinal plants. Headache treatments were provided by the following plants: Rosemary oil (*Rosmarinus officinalis*), Orange seed (*Citrus sinensis*), Lemon balm (*Melissa officinalis*), and Margaridinha (*Leucanthemum parthenium*) (Taufner et al. 2006).

However, several concerns can be highlighted by this kind of therapy. In 2003, Amaral evaluated medicinal plants available in the informal commerce of São Luís, Maranhão, Brazil, and found that most herbs were not passed for consumption and 81.5% had bacterial contamination. (Amaral et al. 2003).

The use of the hallucinogenic brew *ayahuasca*, obtained from infusing the shredded stalk of the *malpighiaceous* plant *Banisteriopsis caapi* with the leaves of other plants such as *Psychotria viridis* is found in a religious community called Santo Daime and "União dos vegetais." This religion is also called "forest religion" due to its connection with Amazon region. According to Lang, this tradition is a "spiritual mission that conduct their followers to cure and regeneration processes, through the use of *ayahuasca* (Lang 2008).

Another substance used in Brazil is the frog secretion *Phyllomedusa bicolor*, also known as Kambô. According to a recent publication, (Lima and Labate 2007) the use of this kind of substance is increasing in Brazil, especially in urban cities. Its users vary from tappers to health professionals and the cure for conditions such as, diabetes, heart disease, headache, and migraine are mentioned.

Concerning religious and spiritual treatments, we should mention two different groups: the Pentecostal evangelic churches and the Spiritists.

In Pentecostal evangelic churches, worship services are performed in order to bless individuals and in some cases take away demoniac spirits causing the disorder. According to Nascimento Cunha et al. (2008) some unpleasant events, interpreted as punishment by God, are cured depending on the performance of duties and obligations. There are several television programs regarding these therapies stating cures for lots of medical conditions, including headaches. This can be clearly seen in an excerpt from an article published in 2007. A young man stated: "I remember one day that I had a very severe headache. The Evangelical minister prayed and the pain went away" (Pacheco et al. 2007).

Spiritism is a Christian popular religion in Latin America. Its perspective on mental disorders exerts a great influence in Brazil (Moreira-Almeida and Neto 2005; Moreira-Almeida et al. 2005). Spiritist theory supports the survival of the spirit after death with an exchange of knowledge between the incarnated and disincarnated spirits. A model of spiritual etiology without rejecting the biological, psychological, and social causes of mental disorders is used. The Spiritist etiologic model for mental disorders includes the negative influences of discarnated spirits (termed "obsession") and trauma experienced in previous lives. Several therapeutic approaches are recommended in a variety of conditions including headaches such as the use of "fluidified" (magnetized) water, reading religious texts, prayers, energy healing using hands ("passes"), disobsession (treatment for "obsession"), efforts to live according to ethical principles, and spiritual surgery.

Conclusion

As reported above, there are several traditional treatments for headaches in Latin America, in which two groups are well defined, medicinal plants and spiritual therapy. Most of them are used frequently; however, studies showing their results are lacking in the literature.

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