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Nourishing the Nerves

Specific medicines

by Deborah Francis, R.N., N.D.

In these high stress times, herbal nervines, sedatives and adaptogens provide an important role in clinical practice, both in the treatment of disease processes and in staying healthy. Specific prescribing, individualized to the particular patient's response to their life experience in an y given moment, gives us tools for choosing among the wide array of herbs we have to prescribe for the nervous system.

Nervines may generally be defined as that class of herbs that calm the nervous system. These herbs may be very nourishing, as in the case of Avena sativa or trophorestorative, as with Hypericum perforatum or Centella asiatica. A sedative is an herb with a stronger action on the nervous system and one that is more likely to induce drowsiness. This class of herbs is most useful in the treatment of insomnia. Passiflora incarnata and Valeriana spp are two examples of sedative herbs. Adaptogens are herbs that help us deal with stress more effectively at a physiologic level. These herbs often have a strengthening or tonic affect on the adrenal glands and immune system. Examples include Glycerrhiza glabra and Eleutherococcus senticosus. Of course these categories are not pure and there is lots of crossover.

Hypericum perforatum (St. John's Wort)

Hypericum has a wide reputation as a regenerative nerve tonic for both psychiatric and neurologic conditions. It is directly calming to the limbic system and, as numerous studies have shown, is a powerful adjunct in mild to moderate depression.

Hypericum, named for the Greek Titan, Hyperion, God of the Sun, has a strong relationship with the sun. In some sensitive persons or in very high doses taken internally, it is known to cause photosensitivity reactions, yet it is used topically as a mild sunscreen and

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Premenstrual Syndrome

Chanchal Cabrera MNIMH, AHG

Pre-menstrual syndrome (PMS) is a condition affecting, to some degree at least, up to 75% of all women at some time in their menstruating years. It usually occurs from 2 - 14 days prior to menstruation, and is thought to be primarily a problem of inappropriate hormone secretion or inappropriate bodily response to hormones (receptor site defects or enzyme defects at cell surfaces). Symptoms are many and varied, often inconsistent from month to month and affected by many different factors. They include tension and irritability, headaches, decreased or increased energy, insomnia, fatigue, breast swelling and pain, bloating, bowel disturbance, acne, sweet or salt cravings and depression. There is a wide spectrum of symptoms in PMS but some common underlying hormonal states include:

- Unusually high estrogen and low progesterone levels 5-10 days before menses (common)
- Low estrogen and high progesterone levels 5 - 10 days before menses (less common)
- Elevated Prolactin levels.
- Elevated FSH levels 6 - 9 days before the period.
- Elevated Aldosterone levels 2 - 8 days before the period.
- Hypothyroidism
- Hormone Imbalances

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Inside

Premenstrual Syndrome *from Page 1*

The imbalance of estrogen and progesterone may be due to a disruption of the normal feedback systems that control the hypothalamus-pituitary-ovary axis or to a dysfunction of any one of these glands (most commonly the ovaries). This is commonly considered to indicate a deficiency or failure of the corpus luteum and points to the use of ovarian tonic herbs (Anemone pulsatilla, Chamaelirium luteum) for treatment. It may also be that the ovaries are functioning fine, but hepatic metabolism and excretion of estrogens is impaired. Dr Morton Biskind in the 1940s showed that B vitamin deficiencies caused liver impairment and accumulation of estrogens that contribute to PMS, fibro-cystic breast disease and menorrhagia. B vitamins, in particular B6, are required for the hepatic metabolism of estrogens prior to excretion and it is reasonable to extrapolate that B vitamin deficiency contributes to estrogen loading and PMS in a significant way. Estrogen therapy and the birth control pill are known to contribute to cholestasis (the so-called sluggish liver) and so there may be a vicious cycle where B vitamin deficiency causes diminished estrogen clearance and elevated estrogen impairs liver function. Bitter hepatic stimulants and cholagogues are called for here (Taraxacum off., Berberis vulgaris, Fumaria off., Arctium lappa, Curcuma longa), along with nutritional co-factors such as B vitamins, methionine, phosphatidyl choline, inositol, N-acetyl-cysteine and glutathione.

Estrogens are conjugated in the liver for excretion via bile. An enzyme called beta-glucuronidase from intestinal bacteria can convert conjugated excreted estrogen back into an active form that can be reabsorbed. A diet high in fiber provides a substrate for optimal bacterial growth with reduced levels of beta-glucuronidase, and encourages a rapid transit time and enhanced elimination of excretory substances. Women with higher amounts of dietary fiber more estrogen in their feces and lower plasma levels of unconjugated estrogens.

Elevated prolactin levels imply a degree of pituitary imbalance or dysfunction, especially a lack of sensitivity to the usual inhibitory messages. Prolactin is produced by the anterior pituitary in response to estrogen and is responsible for milk production and glandular activity in the breast. It is normally inhibited by dopamine, which itself is inhibited by high circulating estrogen. Elevated FSH levels may be due to pituitary dysfunction. Elevated aldosterone, like FSH, implies a degree of pituitary dysfunction and lack of sensitivity to a rising water content of the body.

Low thyroid function affects a large percentage of women with PMS. Hypothyroidism may manifest as reduced pituitary stimulation, impaired thyroid hormone formation or impaired cellular conversion of T4 to T3. Careful testing of these parameters can reveal the origin of the problem. Low thyroid hormone and elevated TSH indicates primary hypothyroidism or glandular dysfunction and consequent reduced hormone manufacture. Low TSH and low thyroid levels indicate secondary hypothyroidism or pituitary deficiency. Normal thyroid levels and normal TSH levels combined with low basal metabolic rate and symptoms of slow metabolism indicate cellular defects in T4 - T3 conversion. Hypothyroidism is also associated with depression, which can contribute to PMS symptomatology.

PMS classification

PMS is classified into 4 sub groups, each with specific symptoms, hormonal pictures and metabolic abnormalities .

PMS A

In this type of PMS there is an excess of estrogen relative to progesterone. Estrogen stimulates the brain by altering the ratio and levels of certain neurotransmitters. Specifically, estrogen raises levels of adrenalin, noradrenaline and serotonin and decreases levels of dopamine and phenylethylamine . This brain stimulation brings about the symptoms of anxiety, nervous tension and mood swings. Estrogen also affects mood by blocking the action of vitamin B6 and decreasing the body's ability to maintain normal blood sugar levels. There is also a possibility that high estrogen and low progesterone may impair the functioning of the endorphins which promote mental relaxation.

PMS C

The symptoms of this type of PMS are similar to those of hypoglycemia, and following general guidelines to control hypoglycemia will be beneficial. Glucose Tolerance tests performed on PMS C sufferers in the 10 days preceding the period indicate an excessive secretion of insulin in response to blood sugar levels, the insulin: blood sugar ratio being normal at other times of the month. The exact mechanism by which this comes about is not clearly understood but a deficiency of PGE1 is known to inhibit glucose-induced

PRE-MENSTRUAL SYNDROME CLASSIFICATION

Subgroup	Symptoms	Mechanisms	Prevalence (%)
PMS A	Anxiety Irritability Mood Swings Nervous Tension	High Estrogen Low Progesterone	65-70%
PMS C	Food Cravings Headache Fatigue Dizziness Palpitations Increased Appetite	Low Prostaglandin PGE1	25-35%
PMS D	Depression Crying Forgetfulness Confusion Insomnia	Low Estrogen High Progesterone Elevated Aldosterone	23-37%
PMS H	Fluid Retention Weight Gain Breast Tenderness Abdominal Distention Swollen Hands and Feet	Elevated Aldosterone	65-72%

(Adapted from the ***Encyclopedia of Natural Medicine*** by Murray and Pizzorno, Prima Publishing, 1990)

insulin production and thus may be operative in PMS C. Sodium chloride enhances insulin response to sugar ingestion and low pancreatic magnesium levels leads to increased insulin production. Thus when treating this form of PMS it is advisable to avoid table salt and supplement with 300 - 600 mg. of magnesium daily.

PMS D

This type of PMS appears to be due to an excess of progesterone relative to estrogen, the progesterone acting on the brain as a depressant. It may also be aggravated by the low levels of estrogen which promote breakdown of mood-enhancing neurotransmitters. PMS D is aggravated by deficiencies of B6 and magnesium, and by stressing some cases of PMS-D there is an excess of lead in the plasma as measured by hair analysis. This is thought to be due to the relative deficiency of magnesium which thus favors the uptake of lead. This is significant because lead blocks the binding of estrogen to receptor sites yet has no effect on progesterone binding

PMS H

The symptoms of PMS H are essentially those of water retention, brought about by stress, low magnesium and high estrogen, which disrupt the normal ACTH/Aldosterone axis. A vicious circle can occur in which the high aldosterone level increases the renal output of magnesium, which further raises the aldosterone level. Because pyridoxine requires magnesium for conversion into it's active form, a deficiency of vitamin B6 is commonly associated with PMS H.

PMS Case Study

Ms. C. was 40 years old when she first consulted with me in the summer of 2000, just finished graduate school and anxious to get pregnant before it was too late. She and her husband had been trying to conceive for over a year and were fearing infertility. Until the age of 35 she had virtually no gynecological disturbance except for mild PMS. Her symptoms included cravings for chocolate, salt, carbohydrates and

coffee. She also complained of some fibrocystic breast tissue with a pre-menstrual flare, irritability and depression (PMS types C, D, H). In 1995 she began to experience severe dysmenorrhoea and worsening PMS. Six months later she was leading a yoga class one day when she experienced an acute abdominal pain that was short lived and self limiting, but severe. The following day she had an elevated temperature and grumbling right abdominal pain. An ultrasound revealed a large chocolate cyst on the right ovary, indicating progressed endometriosis, and two 2 - 3" intra-muscular fibroids. She took Traditional Chinese Medicine (formulas not available) and found some relief from the worst of her symptoms. After three months she had surgery to remove the cyst but has not had surgery on the fibroid. When she consulted with me she had been unable to obtain the Chinese herbs for several months. She was experiencing worsening of the PMS symptoms and menstrual pain. She was aware of acute pain (mittelschmerz) every other month on the right side and she charted regular ovulation and menses with a specially calibrated thermometer for basal body temperature. Her OBGYN was urging her to have surgery again to remove more small cysts on both ovaries and to undergo a fallopian tube patency test. She was reluctant to have more surgery seeing that it hadn't solved anything the first time. She had undergone no hormone testing nor had her husband had any sperm tests done. She was a professional yoga teacher and also swam several times a week. Her diet was fairly restricted. She noticed a sensitivity to wheat and dairy products and generally avoided them. She had been vegan for some years and became anaemic and B12 deficient which had been adequately treated. After the surgery she had re-introduced some fish, turkey, chicken and eggs, all free-range and organic. She prepared most foods at home, whole grains, tofu, fruit and vegetables. She drank water, green tea and ice tea, and had recently broken a long standing coffee habit. Her dietary supplements were vitamin C 2 - 3 grams daily, acidophilus and Fergon (Iron).

Recommendations

I suggested a hormone screen using saliva samples. Eleven samples were sent over a one month period. While waiting for these results and before commencing with the herbs, I prescribed the following herbs and supplements:

Green Goddess Tea

A proprietary blend that tonifies and strengthens all the female organs and aids in regulating the cycle.

Red raspberry (*Rubus ideaus*), Nettle (*Urtica dioica*), Chamomile (*Chamomilla recutita*), Lemon balm (*Melissa off.*), Black haw (*Viburnum prunifolium*), Chaste berry (*Vitex agnus-castus*), Motherwort (*Leonurus cardica*), False unicorn (*Chamaelirium luteum*), Ginger (*Zingiber off.*) and Yarrow (*Achillea millefolium*). 1 heaping teaspoon per cup of hot water three times daily.

Women's Balancing Essential Oil Blend

A synergistic blend of essential oils in a base of pure grapeseed oil. Lavender, Melissa, Clary sage, Fennel and Verbena. To be applied over the lower abdomen and lower back daily.

Optional formula

For use during menstrual cramping.

Jamaican dogwood (*Piscidia erythrina*) analgesic, sedative, relaxing	1:3	25
Black haw (*Viburnum prunifolium)* anti-spasmodic, anti-inflammatory	1:3	25
Valerian (*Valeriana off.)* analgesic, sedative, anxiolytic	1:3	25
Chamomile (*Chamomilla recutita)* analgesic, sedative	1:3	15
Ginger (*Zingiber off.)* warming, pelvic decongestant	*1:*4	10 ml

Dosage: 1 tsp in hot water, sipped as needed.

Supplements

Calcium citrate, magnesium citrate and vitamin B6 each in daily doses of 300 mg from day 1 until 7 days after ovulation and in daily doses of 500 mg from 7 days after ovulation until the menses.

- Vitamin C to bowel tolerance
- B complex to 100 mg
- Floradix liquid iron supplement 2 tbsp daily till hemoglobin level is at 10 and 1 tbsp thereafter. Taken with vitamin C for maximum absorption and increased dose after heavy menses.
- Digestive enzymes (broad spectrum) after each meal Acidophilus
- Castor oil packs over the lower abdomen several times a week. Can be combined with aromatherapy if desired (Clary sage, Rose, Jasmin, Vetivert, Patchouli, Sandalwood, Benzoin)

The hormone tests revealed a delayed follicular phase (18 - 20 days) meaning late ovulation, reduced

pre-ovulatory estrogen surge, low estrogen overall, low progesterone in the follicular phase, low end of normal range progesterone in the luteal (glandular) phase of the cycle and a low-normal level of DHEA. Overall, these results indicated reduced ovarian function, probably due to a peri-menopausal state super-imposed on fibroids and endometriosis. In response to these findings I prescribed a bi-phasic formula that allows for natural alterations in hormone levels throughout the month. This concept was pioneered by Silena Heron ND and has shown to very useful in clinical practice. To support DHEA, adrenal tonics and adaptogens were used. To support the ovaries, phytoestrogens and ovarian tonics were used. Bitters promote optimal liver function, and nervines provide a soothing and relaxing effect.

Moon Phase 1

A specific synergistic combination of herbs designed to support, strengthen and tonify the hormonal systems of the first phase of the menstrual cycle (the follicular or proliferative phase).

Alfalfa (*Medicago sativa)* 1:3 20
estrogenic, nutritive, tonic

Black cohosh (*Cimicifuga racemosa*) 1:3 15
estrogenic, nervine

Dandelion root (*Taraxacum off.*) 1:3 15
bitter hepatic stimulant

Chaste berry (*Vitex agnus-castus)* 1:3 10
pituitary normalizer, LH promoter

Motherwort (*Leonurus cardiaca)* 1:3 10
bitter, tonic nervine

False unicorn (*Chamaelirium luteum)* 1:3 10
ovarian normalizer, pro-estrogenic

Licorice (*Glycyrrhiza glabra)* 1:4 10
estrogenic, adrenal tonic

Arbor vitae (*Thuja occidentalis)* 1:4 10mL
anti-mitotic, pelvic decongestant

Dosage

1 tsp. morning and night from day one of the cycle (first day of menstrual bleeding) until ovulation.

Additionally 40 drops of Dong quai (*Angelica sinensis*) tincture 1:3, to be taken twice as a day from day 1 to ovulation.

Moon Phase 2

A specific synergistic combination of herbs designed to support, strengthen and tonify the hormonal systems of the second phase of the menstrual cycle (the luteal or secretory phase).

Wild yam (*Dioscorea villosa*) 1:3 10
progesterone balancing, promotes DHEA

Chaste berry (*Vitex agnus-castus*) 1:3 10
pituitary normalizer, promotes LH

Black haw (*Viburnum prunifolium*) 1:4 10
anti-spasmodic, anti-inflammatory

Blue vervain (*Verbena off.*) 1:3 10
endocrine normalizer, bitter, nervine

Dandelion root (*Taraxacum off.*) 1:3 10
bitter hepatic stimulant

Ladies Mantle *(Alchemilla vulgaris*) 1:3 10
astringent uterine tonic

Partidge berry (*Mitchella repens*) 1:3 10
uterine tonic and female balancer

Sarsaparilla (*Smilax app*) 1:4 10
adrenal stimulant and alterative

Arbor vitae (*Thuja occidentalis*) 1:4 10
anti-mitotic, pelvic decongestant

Siberian ginseng *(Eleutherococcus sen*)1:3 10 mL
adrenal tonic, adaptogen

Dosage: 1 tsp. morning and night from ovulation until the beginning of the next menstrual period. Repeated use over several months of this bi-phasic formula may be required to obtain lasting change.

Clinical outcomes

I have treated Ms. C for just over 4 months and she has noticed a marked decline in the PMS symptoms. The pain formula has been very helpful and she thinks the dysmenorrhoea is lessening overall. I have advised her to repeat the hormone pael after 6 months on the herbal formula to assess if the fundamental imbalance has been rectified. As long as she has this low endogenous estrogen level then she may be ovulating, as evidenced by the basal temperature changes, but unable to hold an implantation due to inadequate thickening of the endometrium in the luteal phase. Additionally the presence of cystic material around the ovary may impair ovum release into the fallopian tube, the patency of the fallopian tubes is unclear and the fibroid may also inhibit implantation. Overall I advised her that conception and pregnancy were unlikely though not impossible, but that management of symptoms was reasonable to expect. Due to the low levels of estrogen it appears that she is in peri-menopause and the fibroid and endometriosis symptoms can be expected to abate as the menses ceases.

Nervines *from Page 1*

again for sunburn. Its perforated leaves allow sun to shine through, just as the plant taken internally brings the sun into those sad depressed places. Even the flowers are the color of the sun – a beautiful bright yellow. Hypericum works well in alleviating the mild depression of seasonal affective disorder, through its ability to increase our sensitivity to the sun.

Leaonurus cardiaca (Motherwort)

Leonurus is the herb to think of first when anxiety is accompanied by functional heart palpitations due to stress and anxiety or liver toxicity. It is also a bitter digestive, antispasmodic, emmenogogue and useful in hyperthyroidism where it both calms the nerves and protects the heart. Its common name, motherwort, reflects its ability to connect us to Divine Mother, when used in medication. Many writers call Leonurus the herb to mother mothers. It is also said to give courage and strengthen the heart.

Avena sativa (Milky Oat Seed)

Rich in a wide array of nutrients, Avena is a wonderful nerve tonic gentle yet reliable. It is said that Avena can bring focus to the scattered mind that jumps from one subject to the next (Boericke). It also has a reputation for being helpful in breaking addictions to various drugs. Avena is specifically indicated for nervous exhaustions or debility from protracted illness or overwork.

Crataegus spp (Hawthorne)

Although not primarily considered a nervine, Crataegus can often act as a calming agent when specific symptoms indicate. Such symptoms include tension or anxiety associated with a history of grief, or feelings of betrayal and disappointment in relationships. Crataegus is particularly well suited for those patients who have closed their hearts even partly or have built walls to protect themselves or, conversely, for those overly sensitive patients whose anxiety stems from being too open.

Melissa officinalis (Lemon Balm)

Melissa is a soothing nervine whose uplifting qualities make it mildly antidepressant as well. It is carminative and antiviral. As it interferes with thyroid stimulating hormone (TSH) binding to thyroid cells it is contraindicated in hypothyroidism, but may be a helpful adjunt in hyperthyroidism, where the common symptoms of restlessness and agitation make it well indicated.

Scutellaria lateriflora (Skullcap)

Scutellaria is useful for insomnia and nervousness or anxiety where there is muscle spasm, twitching, or tremors. It may also be helpful in functional heart palpitations, a form of muscle spasm, or for insomnia from overwork, worry or long illness.

Humulus lupulus (Hops)

Volatile oil content makes Humulus a good herb to include in a dream pillow for insomnia. Taken internally, the presence of bitters give it some digestive stimulating and cholegogue powers and make it useful for headaches from digestive upset. Its nervine qualities are specifically indicated for the overly intellectualized type of worrier. It is also antispasmodic, as are many of the nervine herbs.

Agrimonia eupatoria (Agrimony)

The flower essence of Agrimony is indicated for people who suffer from terrible inner turmoil, yet put on a cheerful face. Small doses herbally can have a similarly calming effect when indicated. It is commonly known as an astringent. Its near relative, Potentilla anserina may have similar indications, but seems, in my experience, to impart a sense of empowerment and centeredness as well.

Piper methysticum (Kava Kava)

Used traditionally as a sacred ceremonial herb in the South Sea Islands, Piper methysticum is said to invoke the higher states of consciousness and increase openness in social gatherings or important meetings. Experience in clinic reveals that Piper has an ability to lift one out of a deep chaotic emotional state of either anxiety or depression to a place of clearer vision and centeredness. It not only calms but actually lifts the patient to a different place. It is specifically indicated for patients who have done their inner work, taken the "dark of night of the soul" journey, as it were, yet cannot break free of the angst.

Piper can induce a mild feeling of peace and euphoria. Part of its ability to uplift may be linked to the fact that it moves thinking from a linear processing of information to a greater sense of being and understanding where there is more capacity to flow and let be. This plant seems to encourage us to relax into other, more expansive parts of our brain, while still maintain and even sharpening our ability to stay focused.

Piper methysticum can be toxic in prolonged or high dosage. Symptoms of such toxicity include yellow, dry, rough skin and increased liver enzymes, all reversed when the herb is discontinued. Very large doses can cause dilated pupils and unsteady gait.

Cimicifuga racemosa (Black Cohosh)

Specific indications for Cimicifuga include a deep dark depression, a sensation of a black cloud that sometimes descends suddenly out of nowhere and a feeling of wildness in the mind with an inability to focus. This wildness of the mind and inability to focus may bring on or accompany acute or chronic anxiety. It is anti-inflammatory, antispasmodic, antirheumatic, and antihypertensive as well as being regulatory to female reproductive organs. It may be used as a pelvic decongestant for both men and women.

Artemesia tridentate (Sagebrush)

Sagebrush is most specifically indicated when depression or anxiety is associated with a sense of being caught in either or patterns, or when the patients are feeling split off and isolated from parts of themselves or from others. Sagebrush is invaluable for those patients who feel that certain objects, most commonly electronic equipment are the source of demonic voices or bugging devices. This is a common perception in people experiencing a schizophrenic state. The use of sagebrush smoke, when the plant is burned as a smudge and passed over the offending objects on a regular basis can be an enormous help in clearing this problem. Inhalation of volatile oils given off in the smoke directly affects the limbic system via olfactory nerve pathways, which in turn has a significant impact on the emotions.

As a tea, Artemesia tridentata is used by native peoples for fevers, colds and flu, as well as indigestion. Like its close relative Artemesia absinthium (wormwood), sagebrush is antiparasitic.

Lavendula officinalis (Lavender)

Another plant high in essential oils, lavender is very soothing to the nervous system, and may be used in a dream pillow for treatment of insomnia. Its folkloric association with the elderly suggests it to be a specific for the insomnia of elders and indeed I have seen a simple sock filled with lavender flowers and kept on the pillow at night do wonders in some case of insomnia in the elderly where valerian and passiflora had failed utterly. Taken internally, lavender acts as a digestive stimulant and may be a helpful adjunt in the prevention and treatment of migraine or toxic headache. In these cases it combines well with feverfew and ginger.

Matricaria chamomilla (Chamomile)

Chamomile is an excellent nervine when the patient is oversensitive, touchy and irritable. It is often given to children who are prone to tantrums or irritable adults, whose oversensitive nature causes them to be impatient and intolerant. It is a wonderful gastrointestinal remedy where it helps stimulate digestive function as well as alleviate symptoms of spasm and inflammation.

Eschscholzia californica (California Poppy)

The California poppy, with its bright yellow and orange flowers and soft green, easy flowing leaves and petals, is well indicated when what is needed is to relax into the moment, and flow, rather than resist. It is a nice antispasmodic as well as a good nervine and is safe even for small children, as it does not contain any of the strong alkaloids found in its relative the Opium poppy.

The sight of this plant blooming brightly is invariably and uplifting experience, suggesting it might be a good adjunct in depression, particularly in those cases where the patent has struggled and feels powerless in the face of life challenges that need to be accepted and embraced.

Passiflora incarnata (Passionflower)

Passiflora works most effectively for those heartful overworked worriers by bringing a gentle healing to the nervous system that soothes the spirit. It is also helpful where functional heart palpitations are part of the picture and stress is due to cares of the heart, as opposed to hops whose worry is more intellectual in nature. In insomnia it works partially as a mild sedative but more as a gentle nervine, healing the overwrought nervous system. Passiflora's cure for insomnia is like a wise gentle grandmother rocking us into a deep peaceful sleep.

Valeriana officinalis (Valerian)

Valerian is often the first herb folks turn to for treating insomnia. Studies from modern scientific research have shown that valerian reduces the time it takes to fall asleep. Its bitter qualities and volatile oils stimulate and tonify the digestive system causing, in some cases, the reverse effect of overstimulation and wakefulness. Unlike the gentle Passiflora, valerian seems to act like a strong warrier ordering us to sleep. The two work well together.

Adverse Effects

Cardiotoxic effects of Blue Cohosh on a fetus

A newborn infant whose mother took capsules of blue cohosh (*Caulophyllum thalictroides*) for several weeks as a preparation for birth was born with an acute myocardial infarction, congestive heart failure, and shock. The labor was also precipitous, coming on suddenly and lasting only one hour (Jones and Lawson). Some herbalists and midwives have responded to the case defensively, arguing that centuries of traditional use has never shown this effect before, and that the infant's problems cannot be attributed to blue cohosh on the basis of this single anecdote.

However, blue cohosh contains alcohol-soluble constituents with demonstrated effects on the heart (Jones and Lawson) and a similar case has appeared previously in the scientific literature (Gunn and Wright). One traditional herbal on women's health care warns that blue cohosh can cause precipitous labor when used alone, and that it can affect fetal heart tones during delivery (Weed), and another from 1869 says that the plant was only rarely used in the form of a powder (Cook). This article will examine the historical use of blue cohosh and will demonstrate that Native American use of the plant before the onset of labor was by no means universal; that the mother in the current study consumed a form and dose that were greatly in excess of traditional use by whites, and that blue cohosh was only rarely used alone as a partus preparator (preparation for childbirth).

Early references

The use of blue cohosh as a preparation for pregnancy appears to have entered the American medical literature in the works of medical botanist Constantine Rafinesque in 1828. He states that Native Americans employed ". . . constant use of tea 2-3 weeks prior to partruition," attributing this information to a commercial pamphlet published in 1813 in Cincinnati by an "Indian doctor" named Peter Smith who sold the herb commercially. Note that the term Indian doctor at that time did not necessarily refer to someone of Native American ancestry, and the doctor had not necessarily studied with Native Americans. It was a description of an herbalist who used the native North American plants, plants whose uses had for the most part not entered into regular medicine. Smith's statement cannot be accepted as a primary reference to native American use, although it was repeated in medical literature for the next hundred years on the strength of Rafinesque's reputation. Rafinesque himself only stated that the plant deserved further study.

Native American use

Three standard secondary sources for native American plants show only occasional use of the plant as a preparation for childbirth, although use during labor to promote delivery is more common (Erichsen-Brown, Moerman, Vogel). Vogel mentions use of the plant as emmenagogue, stomachic, aperient, deobstruent, febrifuge, sudorific, demuclent, antispasmodic, antirheumatic. It was also used for suppression of menstruation and for genitourinary complaints in either sex. He mentions its use for stalled labor, but his only reference to use as a partus preparator is a citation of Rafinesque. Erichsen-Brown describes the same uses and sources as Vogel, adding some Canadian sources which repeat the description of Rafinesque. Other than these, she does not describe any use specifically as partus preparator, although use for stalled labor is implied. Most of the tribes listed in Moerman's compendium of Native American plant uses did not reveal the use of blue cohosh as a childbirth aid. Of the ten tribes listed which used caulophyllum, only two ethnobotanical studies found caulophyllum used as a childbirth aid, and in these it is not clear whether they were used as preparation for childbirth or for stalled labor. Moerman's book contains the weaknesses of the field of ethnobotany in general, as there is no guarantee that the women of the tribes told the researchers what they used for childbirth. However, it seems that the use of caulophyllum for childbirth was by no means universal among the tribes within its range, and the major source for taking it as a partus preparator is from a single reference by Peter Smith in 1818, repeated in Rafinesque.

Thomsonian use

Thomsonian herbalism was the dominant system of herbalism, and in rural areas formed a dominant system of primary care medicine, between the 1820's and 1850s. Samuel Thomson himself did not appear to be aware of blue cohosh in his early writings, but by the 1830's the herb was used as a part of the Mother's Cordial formula (see *Medical Herbalism* volume 10, number 3, pages 18-19). The formula has probably been in continuous use as a preparation for childbirth in the United States from the time it was developed by Dr.

Historical use of *Caulophyllum thalactroides* as a childbirth aid

Smith, 1813

Partus preparator
"Constant use of tea 2-3 weeks prior to parturition" attributed to Native women.

Colby, 1846

Partus preparator
1-6 grams per day as decoction, in 2-3 doses as component of Mother's Cordial. With Mitchella, Viburnum, Chamalirium. Decoction.

Williams, 1850?

Stalled labor
Unspecified dose

Gunn, 1861

Partus preparator
8 grams per day decocted in 2 doses.

Cook, 1869

Not alone in childbirth
6-8 grams daily as decoction, in 3 doses. "Rarely used in powder" mostly in decoction.

Partus preparator
1-6 grams per day as decoction, in 2-3 doses. As component of Mother's Cordial. With Mitchella, Viburnum, Chamalirium.

Stalled labor
2-2.7 grams as decoction per half hour, with Cyprepedium, Trillium, Myrica.

Hale, 1878

Partus preparator
Homeopahtic dilutions of several drops of the tincture for a few weeks

Ellingwood, 1919

Partus preparator
5-10 drops fluid extract

Stalled labor
Same

Felter, Lloyd, 1898

Not specific as partus preparator
1-3 grams every 3-4 hours as decoction. 3-10 Drops Specific Caulophyllum (a concentrated pharmaceutical extract)

Felter, 1922.

Partus preparator
6-12 grams per day as decoction, in 3 doses, as decoction, for a few weeks before birth, as component of Mother's Cordial. With Mitchella, Viburnum, Chamalirium.

Grieve, 1931

Stalled labor
3.5- 7 grams root as decoction or 130-325 mg of powder.

Mausert, 1932

Emmenagogue
1.5-2.3 grams/day as decoction, as component of larger formula,

Lust, 1974

Stalled labor
1.3 grams as decoction each 2-3 hours "only under medical supervision"

Shook, 1978

Stalled labor
1.3-1.7 grams as decoction.

Priest, Priest, 1982

Stalled labor
Unspecified dose of tincture.

Mitchell, 1983

Stalled labor
30 drops tincture in two cups of water sipped throughout the day.

Weed, 1985

Partus preparator
5-10 drops tincture twice daily, with an equal amount of black cohosh, taken alone "Can cause precipitous labor"

Stalled labor
3-8 drop doses per half hour. "If fetal heart tones are monitored, there may be noticeable elevation as the blue cohosh starts to work"

Wren, 1988

Ambiguous references on childbirth.
0.3-2 g powder

Mills, 1991

Stalled labor
0.6-3 g powder "Probably unsafe to take in pregnancy until labor has commenced"

P.F. Sweet on Connecticut in 1828 until the present day, and is available in tincture form from a variety of suppliers. Thomsonian Benjamin Colby does not record any use of blue cohosh as a single herb in preparation for birth in his text from 1846, and neither does Physiomedicalist William Cook in 1869. Cook states that the herb was used primarily in decoction, and only rarely as a powder. It is notable that the Thomsonians often used very large doses of herbs – as much as an ounce a day of the emetic lobelia for instance – yet used this herb conservatively in pregnancy, in small doses in decoction, and in conjunction with other herbs. This widespread historical use demonstrates safety of the herb in this form in most cases. Occasional fatal averse effects on the fetus could have been missed during this era of high infant mortality.

Other medical use

The other schools of medicine gradually adopted the use of blue cohosh from the Thomsonians, with the exception of Ellingwood in 1919, none of the Eclectics advocated use of blue cohosh alone as a preparation for pregnancy. Ellingwood used doses of 5-10 drops of the fluid extract as a preparation for pregnancy. It was commonly used by all the schools for stalled labor. The homeopaths used it as a partus preparator in homeopathic potency or in drop doses of the tincture for a few weeks before birth, and also to prevent miscarriage in certain cases (Hale). See Table 1 for a review of the historical forms and doses of blue cohosh as a childbirth aid.

Form and dose

The table on page 13 shows a summary of the historical forms and doses of blue cohosh as a childbirth aid in North American and British herbal literature. With only a few exceptions, it was not used alone as a preparation for childbirth, but was used with other herbs in the Mother's Cordial formula. Relatively large doses of the root or powder were used in decoction, but only very small doses of the tincture were used. Use of the powder undecocted as a preparation for childbirth is not recorded in these texts. The high-dose of decoction vs low-dose of tincture pattern suggests that the active properties of the plant are poorly soluble in water and very soluble in alcohol. Eclectic pharmacist John Uri Lloyd states in 1898: "Blue cohosh partially yields its virtues to hot water and glycerin, and fully to alcohol." Jones and Lawson suggested that the constituents responsible may have been the alkaloid methylcystine, which has vasoconstrictive effects, or the saponins caulosaponin and caulophyllosaponin, which are uterine stimulants and may also cause coronary vasoconstriction.

Use and side effects

If traditional use were followed, blue cohosh as a partus preparator would be used in relatively large dose as a decoction, in very small doses as a tincture, and would not be used alone or as powder or whole root. Among contemporary herbalists, Susun Weed states that blue cohosh should not be used alone, because it can cause precipitous labor. She also states that when using it in stalled labor "if fetal heart-tones are monitored, there may be noticeable elevation as the blue cohosh starts to work." Simon Mills states that it is "... probably unsafe to take in pregnancy until labor has commenced," and Sharol Tilgner states: "Overdose may cause nausea, vomiting, headache, thirst, dilated pupils, muscle weakness, incoordination, constriction of coronary blood vessels, cardiovascular collapse, and convulsions."

Conclusion

In the 1998 case reported by Jones and Lawson, the mother took 1 tablet of blue cohosh powder three times a day for three weeks before birth. Her midwife had instructed her to take 1 tablet per day. Blue cohosh powder contains all the alcohol-soluble constituents of the plant, and if used at all would require very low doses, 5-10 mg of the powder for instance, and a dose of even 1 capsule would be an overdose by a factor of 30-60 times. The use of blue cohosh in this form is not supported by historical herbal use, and the precipitous labor and cardiotoxicity are consistent with pre-existing warnings in contemporary herbal literature.

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References continued on page fifteen

Clinical Correspondence

The Rh Factor and Herbal Abortions

By Kari Radoff, Clinical Herbalist

The Rh factor is a subject that has rarely been discussed in the case of herbal abortions. In pregnancies, ending in either delivery, miscarriage, or abortion, in a conventional medical setting, the Rh factor is always taken into consideration.

The Rh factor is a component of the blood. 85% of Americans have Rh-positive (Rh+) blood, while 15% have Rh-negative (Rh-). If a woman has Rh- blood she can be at risk for complications in her second and future pregnancies, if her first pregnancy is with that of a fetus who has Rh+ blood. Generally her first pregnancy (with a Rh+ fetus) will result in a healthy live birth. During the course of the pregnancy, delivery, or possible miscarriage and abortion, the mother may build up antibodies to the fetal Rh+ blood. These antibodies are generated if the fetal blood passes through the placenta into the mother's blood stream. If the antibodies are formed and left untreated, there may be risks for future pregnancies with Rh+ fetuses. These risks include reoccurring miscarriages, as well as disorders of the fetus such as erythroblastosis fetalis, a disease where the antibodies destroy the fetal red blood cells, resulting in anemia and brain damage. In an allopathic setting women giving birth, suffering a miscarriage, or choosing an abortion are all given a shot of RhoGAM intramuscularly if they have Rh- blood, to prevent these risks. RhoGAM is given either prior to delivery and abortion, or within 72 hours of birth, miscarriage, and abortion. RhoGAM renders any RH+ antibodies inert.

The importance of Rh- blood type in herbal abortions can be seen in the following case study. A woman was two weeks pregnant when she began receiving counseling for an herbal abortion. She followed all recommendations for five weeks with no results. The woman then decided to have a clinical abortion. At the abortion clinic she discovered that she was Rh- and they explained the risks of having this blood type. They questioned whether she had any spotting, because that itself could be a risk for Rh+ antibody production. To her relief, she had no spotting and did not miscarry. She then underwent the clinical abortion and received a shot of RhoGAM. This woman was frustrated that the herbalist had not screened for this, and even more so that the herbalist had little knowledge of the relevancy of Rh- blood type in relation to abortion. Had she spotted or aborted the fetus, she may not have been able to carry a subsequent child to term.

In conclusion, the Rh factor should become a subject of common knowledge among those herbalists choosing to counsel women in herbal abortions. Herbal practitioners should take the same precautions as those in conventional medical settings. Women should be screened for their blood type in all cases. If the herbal abortion clients are Rh- they must be educated on the risks of having Rh- blood type. Herbalists should be responsible for this knowledge, understanding what effects the Rh factor can have on women.

Kari Radoff is a clinical herbalist in private practice in Denver Colorado. She teaches in Denver and at the Northeast School of Botanical Medicine in New York

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Clinical Trials

Valerian Trials

By Jill Hoppe, Certified Herbalist

A controlled and double-blind German study evaluated whether valerian root extract impaired reaction time, alertness and concentration the morning after administration, in 102 people. A computer-assisted application measured reaction time, alertness, two-handed coordination, sleep quality, and visual discrimination tasks. One group took 600 mg. valerian root extract (LI 156), another took 1 mg. of the benzodiazepine flunitrazepam (Rohypnol), and a third group took placebo. The next morning, valerian did not impair reaction abilities, concentration or coordination in any patient. After fourteen days of nightly administration, a second evaluation took place. Patients taking valerian or placebo did not experience significant negative impact. The researchers concluded that single or repeated use of 600 mg. valerian root extract does not have a negative effect on reaction time, alertness and concentration the morning after intake. (Kuhlmann).

Valerian is not a narcotic. Its influence upon he nervous system is best obtained when the circulation of those centers is inactive and feeble, especially when there is a paleness of the face and the skin is cool. This agent has long been known as a nervine. It is gentle and soothing in its influence upon the nervous system, especially upon the spinal centers. It is applicable in the nervousness of depression because of its gentle stimulating influence, and in these cases its influence is heightened by combining it with stimulants.

In a recent Gallup survey, 36% of American respondents reported insomnia complaints. The benzodiazepine tranquilizers (valium, xanax, etc.) are the most widely used substances for the treatment of sleep disorders. Benzodiazepines effectively induce sleep, but they are addictive and have other side effects including impaired coordination, negative effects on memory, confusion, lethargy, weakness and rebound insomnia after withdrawal. Valerian may be a useful alternative for people with sleep problems or anxiety.

Traditional Use

Valerian has been traditionally employed as a nervine, carminative, and sedative. Galen (130–200 CE) prescribed valerian for insomnia and numerous ailments. Felter (1922) recorded the use of valerian for cerebral and spinal stimulating effects, hysteria, hypochondria, headache, hemicrania, chorea, mental depression, carminative effects, and nervine actions, particularly when "the brain circulation is feeble and there is mental depression and despondency."

Recent Trials

Clinical research shows that valerian improves overall sleep quality, shortens the time it takes to fall asleep and decreases the number of perceived awakenings during sleep. One double-blind, placebo-controlled valerian study of 128 people measured subjective sleep parameters. Each person received 3 samples containing placebo, 3 samples containing 400 mg. valerian extract, and 3 samples containing an over-the-counter preparation with 400 mg. valerian and hops strobiles. The samples were administerd on non-consecutive nights. Compared to the placebo, valerian reduced the fall asleep time and increased sleep quality--particularly among those who considered themselves poor or irregular sleepers. The commercial preparation with valerian and hops was not as effective as the experimental valerian extract (Leatherwood).

In-vitro and in-vivo experiments have identified antispasmodic effects on smooth muscles, hypotensive effects, and dilating effects on coronary arteries. Anti-depressant activity has also been investigated. A randomized, investigator-blinded study with 39 fibromyalgia patients examined the effects on pain, disturbed sleep and tender point count using plain water, pine oil or valerian whirlpool baths. The baths were carried out 10 times, three times per week. General pain, daytime change of pain intensity, well-being and occurrence of disturbed sleep were recorded before and after therapy. The number of tender points were identified by digital palpitation. Pain threshold on the shinbone and middle part of the deltoid muscle, and pain threshold and pain tolerance of both trapezius muscles were measured by an instrument used to asses pain. After the valerian baths, well-being and sleep significantly improved and tender point count decreased significantly. Pine oil baths resulted in significant improvement in well-being, but a significant decrease of pain threshold in the shinbone and the right deltoid muscle. Plain water baths significantly reduced general pain intensity. (Ammer)

Mode of Action

Valerian contains an extensive array of active constituents. Most valerian studies, however, have focused upon the valepotriates, volatile oils and valerenic acid. Despite extensive investigation, the exact constituents responsible for valerian's sedative effect, and the mode of action, remain unknown. Like many medicinal plants, the therapeutic effect depends upon the interaction of the plant's constituents as a whole, rather than its isolated parts. Valerian contains amino acids, alkaloids, phenolic acids, flavonoids, caffeic acid, choline, B-sitosterol, fatty acids plus numerous additional constituents and minerals. A nutritional analysis identified valerian as the best herbal source of calcium examined (Pedersen). A root analysis identified 42,000 parts per million (Duke).

Valerian's sedative effects may involve the inhibition of the breakdown of the amino acid gamma-aminobutyric acid (GABA). A study using aqueous valerian root and rhizome extract exhibited an increase in GABA at the synaptic cleft (space between the junction of two neurons) by inhibiting re-uptake and/or stimulation of GABA release from nerve terminals on isolated rat brain synaptosomes. The release was Na+ dependent and Ca2+ independent. GABA is a major inhibitory neurotransmitter that induces relaxation by blocking the arousal of brain centers (benzodiazepines are thought to potentiate the activity of GABA). Since GABA does not readily cross the blood-brain barrier, however, the authors of this study were not convinced that valerian binds to GABA receptor sites in the brain (Santos). The amino acids of valerian root and rhizome extracts were evaluated in another study to identify whether an exchange mechanism is involved in the GABA release, induced by valerian extract. Arginine and glutamine were the highest amino acid concentrations found, followed by alanine and GABA. The authors comment that the high glutamine concentration could contribute to valerian's sedative effects since glutamine crosses the blood-brain barrier, where it can be taken up by the nerve terminals and metabolized to GABA. The actual GABA present in the valerian preparation may also contribute to valerian's sedative properties (Santos).

Authors of a 1999 double-blind study with 16 insomniac patients theorized that slow distribution and slow increase in concentration of valerian to the effector site may produce the mild sedative effect, but only after prolonged use. No effect on sleep was noted by insomniacs with short-term valerian treatment, but after two weeks of treatment, sleep and subjective sleep perception improved. An unexpected outcome in this study was a significant reduction in headaches and gastrointestinal complaints while patients were taking valerian (Donath). This finding is consistent with the traditional use of valerian.

Indications

Like many medicinal plants, valerian has numerous medicinal uses but its main indications are for tension and anxiety. Valerian may be used during anxiety, nervous insomnia, tension-induced indigestion or muscle cramping. The eclectic specific indications of pale face and deficient cerebral circulation may help predict the patients most likely to benefit, and patient without those indications may be most likely to experience adverse effects of overstimulation and insomnia.

Dose

The fresh or recently dried root is believed to be the highest quality herb.

Tincture (fresh, whole plant 1:2; dry root 1:5, 70% alcohol): 30 – 90 drops, to 3 times daily

Capsules (root - #00): 2 – 3 daily

Hot Tea: Two teaspoons dried root per 1 cup boiling water, 2-3 times daily, one before bed

Cold Infusion: Pour a glass of water over 2 teaspoons dried root, let stand 8 hours

Plant juice: Adults = 1 tablespoon 3 times daily. Children = 1 teaspoon 3 times daily

External use: Brew a strong valerian tea, strain and add to bathwater

Standardized extract (1.0 to 1.5 valtrate or 0.8 valeric acid): 300 – 400 mg. daily

Cautions

Energetically, valerian is acrid, slightly bitter, and warm. Culpepper (1649) stated that valerian is "under the influence of mercury, and therefore hath a warming faculty." Sauer (1777) wrote "Valerian possesses the virtues of warming and drying; of dissolving thick humors trapped in small glands; of strengthening the eyesight, head, and liver; of forcing urine and sweat; and of withstanding all poisons." The warming effects of valerian may be why some people find valerian stimulating. Valerian may aggravate tiredness the morning following administration in some people. If this occurs, herbal traditions suggest reducing the dose in half.

The valepotriates have been found to be toxic in-vitro; however, this has not been demonstrated in-vivo. (Chan)

Empirical evidence suggests that valerian may alleviate symptoms when attempting to withdraw from benzodiazepine drugs (Andreatini). Valerian was implicated in a serious withdrawal effect, however, which included cardiac complications and delirium in a 58-year-old man with a history of coronary artery disease, hypertension, and congestive heart failure. The patient was admitted to a hospital for a lung biopsy and upon admission he was taking multiple medications (isosorbide, dinitrate, digoxin, furosemide, benazepril, aspirin, lovastatin, ibuprofen), potassium, zinc, vitamins and 530 mg. – 2 g. per dose of valerian extract daily. This dose is perhaps five times the dose used in traditional herbalism. Herbal remedies are usually discontinued in hospitalized patients and this patient began exhibiting symptoms within 24 hours after valerian discontinuation. Since the patient's symptoms were reversed with administration of the benzodiazepine midazolam (1 mg every hour, total dose of 11 mg in 17 hours), the authors hypothesized that valerian withdrawal produced a benzodiazepine-like withdrawal syndrome. The authors considered that the medications increased the potential for a valerian withdrawal reaction. (Garges).

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