

Black Cohosh and Chasteberry: Herbs Valued by Women for Centuries

BY JOSEPH L. MAYO, MD, FACOG

A woman's quality of life is often associated with a healthy hormonal balance throughout her reproductive and menopausal years. Disruptions in hormone balance can lead to menstrual disorders such as irregular bleeding and heavy bleeding, symptoms of premenstrual syndrome (PMS), as well as menopausal complaints later in life. There is a strong need for therapies to treat these problems, as it is estimated that over 30% of all women experience symptoms of PMS during their reproductive years.¹ In addition, 3,500 women enter their menopausal years every day in the U.S., the majority of whom experience significant symptoms.² While Western medicine addresses these concerns with pharmaceuticals, often with undesirable side effects, herbs such as chasteberry (*Vitex agnus-castus*) and black cohosh (*Cimicifuga racemosa*) offer an option for women who would like a safe, natural approach to reducing menstrual cycle and menopausal discomforts.^{3,4}

[For a more detailed discussion of PMS, menopause, and the menstrual cycle, please refer to our previous *Clinical Nutrition Insights*: Vol. 5, No. 6-9]

WOMEN ARE ENRICHED BY A GREEN PHARMACY

From the beginning of time, women have had a special relationship with the earth. During the earliest civilizations, women gathered wild plants for food and medicine, discovering the value of these plants through intuition as well as trial and error. This precious knowledge was passed down through generations and became the basis of traditional herbal medicine. These traditional systems of herbology included medicinal plants that played a special healing role for women, such as black cohosh, an herb cherished by Native American women, and the European herb, chasteberry.

Ayurveda, the traditional healing science of India dating back 5,000 years, also utilizes several herbs that focus on the special needs of women. Shatavari (*Asparagus racemosus*), the most important female-specific Ayurvedic herb, and ashwagandha (*Withania somnifera*) have a broad spectrum of applications relating to their strong rejuvenative properties, particularly on the female reproductive organs.^{5,6}

CHASTEBERRY: A BALANCING HERB FROM THE MEDITERRANEAN

This herb consists of the dried, ripe fruits of the chaste tree (*Vitex agnus-castus*), a shrub native to the Mediterranean region.⁴ Chasteberry has a rich history of use as a remedy for women, with the first medicinal accounts recorded by Hippocrates in the 4th

century B.C.⁷ Today, chasteberry is widely used and accepted in Europe as a treatment for female complaints such as PMS, dysmenorrhea, mastodynia (painful breast swelling), and menopause.⁸ It is also used to normalize the reproductive hormones when discontinuing the contraceptive pill,⁹ for mild endometriosis,⁸ and fertility problems.⁷ The German Commission E, a government agency responsible for the registration of plants with traditionally and clinically established health benefits, recognizes extracts of chasteberry to be an effective treatment for abnormal menstrual rhythm, mastodynia, and premenstrual complaints.¹

Functional disorders of the menstrual cycle are typically interpreted as signs of hormonal imbalance, with estrogen dominance and progesterone deficiency during the luteal phase usually implicated, in addition to hyperprolactinemia.¹⁰ Chasteberry contains a variety of active compounds that affect different aspects of the reproductive system and create a balancing, or normalizing, effect. Some of these active compounds include essential oils, iridoid glycosides (agnuside and aucubin), and flavonoids (casticin and iso-orientin).^{1,7}

Chasteberry appears to act directly on the pituitary gland to inhibit the secretion of follicle stimulating hormone (FSH) and promote the secretion of luteinizing hormone (LH).^{1,7,11} FSH causes the granulosa and theca cells in ovarian follicles to grow and secrete a follicular fluid that contains a high concentration of estrogen. Therefore, an inhibition of FSH secretion should reduce elevated estrogen levels. LH enhances the growth of the corpus luteum, which stimulates the secretion of progesterone. Thus, chasteberry's apparent stimulatory effect on LH leads to an increase in progesterone, which may normalize the balance between estrogen and progesterone. Improving the levels of progesterone may be especially useful during peri-menopause when menstrual irregularities are common.

Chasteberry also inhibits the secretion of prolactin. *In vitro* studies demonstrate that certain constituents of chasteberry extract directly bind to dopamine receptors in the anterior pituitary.¹⁰⁻¹³ Dopamine is the physiological inhibitor of prolactin; thus, it appears this dopaminergic effect of chasteberry results in an inhibition of prolactin synthesis and release. Prolactin suppresses the corpus luteum, which leads to a reduction in progesterone production. If prolactin levels are reduced, the corpus luteum would then increase its production of progesterone. Therefore, the normalizing effect of progesterone levels with the use of chasteberry may also be due to its dopaminergic effect in addition to its LH-stimulation effects.

Clinical benefits of chasteberry were demonstrated in a 3-month randomized double-blind, placebo-controlled trial of 37 women with menstrual disturbances and latent prolactinemia. Women receiving the chasteberry extract (20 mg/day) had a significant reduction in prolactin release compared to placebo, a significant average increase in the luteal phase of 5 days, an increase to normal levels of progesterone during the mid-luteal phase, and a decrease in PMS symptoms.¹⁰

Similar improvements in PMS symptoms were demonstrated in another study involving 175 women with PMS. The women were given either chasteberry extract or vitamin B₆ over 3 menstrual cycles in a randomized, controlled trial. At the conclusion of the study, 36.1% of the participants in the chasteberry group were symptom free, versus 21.3% of the patients in the vitamin B₆ group.¹

BLACK COHOSH: A GIFT FROM NATIVE AMERICANS

Black cohosh (*Cimicifuga racemosa*) is a popular herbal remedy in Europe for treating a variety of female health problems, particularly menopause. A woodland plant native to North America, the roots and rhizomes of black cohosh were used by Native American women throughout their life for menstrual cramps, difficult childbirth, and complicated menopause, as well as other conditions such as dysmenorrhea, colic, and rheumatism. Native Americans subsequently introduced the herb to the American colonists who used it for women's complaints, as well as illnesses such as bronchitis, nervous disorders, inflammation, and uterine disorders.¹⁴⁻¹⁶

Today, black cohosh is widely used in the U.S. and Europe to help alleviate menopausal symptoms, such as hot flashes, sweats, irritability, and vaginal dryness. The German Commission E recognizes extracts of black cohosh to be effective in PMS, dysmenorrhea, and nervousness associated with menopause.^{3,17}

The action of black cohosh is attributed to the synergy of the entire profile of its active components. These active constituents include the isoflavone (phytoestrogen) formononetin, triterpene glycosides including 27-deoxyactein, actein, racemoside, and cimicifugoside, as well as the aromatic acids ferulic acid and isoferulic acid.^{15,18} Cimicifugoside appears to affect the hypothalamus-pituitary axis resulting in reproductive and nervous system effects, while the aromatic acids are believed to be anti-inflammatory.^{19,20}

Research on laboratory animals suggests that black cohosh acts on the pituitary gland to suppress the secretion of LH.²¹ High levels of LH are associated with menopausal symptoms, particularly hot flashes.¹⁸ Therefore, this LH suppressive effect is important for symptom reduction. In addition, phytoestrogens in black cohosh bind to estrogen receptors, producing a weak estrogenic effect, while other constituents promote mild relaxation.³ Animal research has also shown anti-inflammatory, hypoglycemic, and hypotensive effects with this herb,¹⁵ and limited human research suggests black cohosh may act as a peripheral vasodilator.²¹

The clinical efficacy of black cohosh in treating women with symptoms of menopause has been demonstrated in 5 controlled studies comparing the extract with a placebo or with estrogen therapy. These research studies found that black cohosh extract, at doses of 80-160 mg/day, produced significant changes in the Kupperman index and a series of standard psychometric scales that rate menopausal symptoms. These results support the therapeutic efficacy of black cohosh extract in menopausal women.⁴

Studies evaluating the prolonged use of black cohosh have not been completed and it is recommended that physicians evaluate patients at 6 month intervals and discontinue use of black cohosh for one month between these intervals.^{2,15} In addition, the concurrent use of black cohosh with HRT is not recommended, as the effects of this combination are unknown and would vary with each patient.

COMPLEMENTARY HERBAL THERAPIES FOR WOMEN

Traditional herbalists from different cultures generally combine herbs when designing a formula for their patients. The rationale for mixing plants varies with the strategy underlying the perceived causes of the complaint. For example, botanicals focusing on women's health will typically support liver and kidney function to ensure healthy pathways of detoxification.

Since physical and emotional stress often times play a significant role in predisposing a woman to menstrual irregularities and a heightened irritability level, herbs with nutritive properties and specific components that support the cardiovascular and central nervous systems are welcome additions to herbs that primarily target hormones (see Tables 1 & 2).^{19,22-26}

Plants with diuretic and liver balancing effects, such as the roots of dandelion (*Taraxacum officinalis*), are often helpful for women experiencing a variety of premenstrual and menstrual irregularities.^{27,28} Stinging nettles (*Urtica dioica*) and burdock root (*Arctium lappa*), rich in minerals and nutrients, are also traditionally used in Europe and Asia to provide specific support for the liver, which may help the body process estrogen and reduce symptoms of PMS, dysmenorrhea, and menopause.^{20,29}

In Ayurvedic medicine, shatavari and ashwagandha are considered prime tonic and rejuvenative herbs that provide a balancing effect within the system and improve the body's response to physical and psychological stress. Shatavari is traditionally used as a hormone modulator and to strengthen the liver and blood, while ashwagandha is traditionally used as an adaptogen and to reinforce adrenal function.^{5,6,9,29-31}

Herbs with mild sedative activity, such as motherwort (*Leonurus cardiaca*), lemon balm (*Melissa officinalis*) and fenugreek (*Trigonella foenum-graecum*) are useful for women who experience symptoms of insomnia, tension, or anxiety associated with menopause. Motherwort is traditionally used for women as a nerve tonic, as a sedative, and for its cardiogenic properties.^{9,17,32,33} Lemon balm is also used traditionally to treat symptoms of female disorders including headache, stress-related digestive system problems, spasms, and depression – particularly with symptoms related to the heart.^{9,17}

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Table 1. Selected Herbs for Menstrual Irregularities and PMS

Common Name (Botanical name)	Geographic Origin	Traditional Use	Some Active Constituents
Chasteberry fruit (<i>Vitex agnus-castus</i>)	Greece/Italy	Control and regulation of the female reproductive system sesquiterpenoids, steroids	Iridoid glycosides (agnuside and aucubin), flavonoids, monoterpenoids
Dandelion root (<i>Taraxacum officinale</i>)	Europe Asia North America	Diuretic, lactagogue, digestive aid, tonic	Coumarins, triterpenes, and phenolic acid
Burdock root (<i>Arctium lappa</i>)	Europe Asia North America	Diuretic, antipyretic, hypoglycemic	Inulin, essential oil, phytosterol, mucilage, resin, tannin, glucoside
Nettle leaf (<i>Urtica dioica</i>)	Europe North America	Hemostatic, dysmenorrhea, headache relief, diuretic, liver tonic, treat disease of urinary organs	Formic acid, volatile oil, albumen
Shatavari root (<i>Asparagus racemosus</i>)	India Asia	Diuretic, antiarrhythmic, tonic, lactagogue, antispasmodic	Saponins, antioxytotic
Ashwagandha root (<i>Withania somnifera</i>)	India	Adaptogen, tonic, diuretic, nervine sedative	Withanolides, tropine, choline, withasomine
Sandalwood (<i>Santalum album</i>)	India Asia	Diuretic, urinary antiseptic, tonic, anti-inflammatory	Alpha-and beta-santalols, volatile oil, tannic acid, aldehydes

Table 2. Selected Herbs for the Treatment of Menopausal Symptoms

Common Name (Botanical name)	Geographic Origin	Traditional Use	Some Active Constituents
Black cohosh root and rhizome (<i>Cimicifuga racemosa</i>)	North America Asia (<i>Cimicifuga spp.</i>)	Relaxant, sedative, antispasmodic, to treat dysmenorrhea and menopause	Formononetin, triterpene glycosides actein, racemoside, and cimicifugoside, ferulic acid, isoferulic acid, salicylic acid
Motherwort aerial parts (<i>Leonurus cardiaca</i>)	Asia Europe	Nerve tonic, sedative, cardiogenic, antispasmodic, diuretic	Leonurine, stachydrine, bitter glycosides, resins, annins, saponins, organic acids
Lemon balm leaf (<i>Melissa officinalis</i>)	Southern Europe	Treat insomnia, sedative, headache, stress-related digestive problems, depression	Volatile oil, polyphenols, tannin, flavonoids, rosmarinic acid, triterpenoids
Fenugreek seed (<i>Trigonella foenum-graecum</i>)	Southern Europe India Asia	Tonic, emmenagogue, to treat stomach ailments, rheumatic conditions, and to promote lactation	Mucilage, steroidal saponinins, furostanol glycosides

PHYTOESTROGENS: ADDITIONAL BENEFITS FOR WOMEN

A variety of plant foods and herbs contain biologically active compounds, called phytoestrogens, that can play an important role in maintaining hormone balance and overall health. Their health benefits are attributed to mechanisms that influence estrogen receptor sites, sex hormone binding globulin (SHBG), cell proliferation, angiogenesis, cholesterol synthesis, and platelet aggregation, in addition to antioxidant and anti-inflammatory properties.³⁴⁻³⁶ Because of their estrogenic activity, phytoestrogens are particularly important for women. They provide many of the health benefits of hormone replacement therapy, such as protecting against cardiovascular disease and osteoporosis, while simultaneously protecting breast tissue.

The effectiveness of black cohosh in alleviating the symptoms of menopause is in part due to the isoflavone formononetin, a

phytoestrogenic compound.⁴ Phytoestrogens are believed to occupy estrogen binding sites and thus influence estrogen metabolism.^{34,36} Depending on the type of phytoestrogen, these constituents may be anywhere from 50% as strong as endogenous estrogen (coumestans) to as low as 1000 times weaker (lignans). Because of their low estrogen activity, phytoestrogens help to balance estrogen effects within the body; enhancing estrogen activity when levels are low and reducing estrogen effects when levels are high.³⁶

An assortment of plant foods provide various phytoestrogens, most notably soy foods, flaxseeds, and other legumes such as green peas and clover sprouts.³⁴⁻³⁶ Many women will benefit from a diet rich in these plant foods as they will supply a consistent, moderate level of a variety of phytoestrogen compounds. A phytoestrogen-rich diet would complement herbal therapies during menopause and in general is considered preventative.³⁷