Chaste Tree

Vitex agnus-castus

Common names

Vitex, monk's pepper, chaste berry

Family

Verbenaceae (verbena)

Part used

Fruit

Background and traditional uses

Chaste tree is a deciduous shrub native to Europe, the Mediterranean and Central Asia. It has slender, finger-like leaves, spectacular bright purple flowers and small purple-black berries. Chaste tree has been used for the treatment of women's gynaecological difficulties for at least 2,500 years. The Greek physician Hippocrates wrote, "if blood flows from the womb, let the woman drink dark wine in which the leaves of the chaste tree have been steeped".[1] However, it is usually preparations of the berries that are used medicinally.[2] Chaste tree was used in the monasteries of the middle ages to suppress the libido of monks.[2]

Actions

Primary:[3]

- Hormonal modulator (prolactin inhibitor and dopamine agonist)

Secondary:[4]

- Galactagogue
- Nervine tonic
- Anticancer

Applications and indications

- Pre-menstrual syndrome (PMS), menstrual disorders and irregularities.
- Symptoms associated with menopause, including hot flushes.[5,6]
- Bone and Mills also suggest that the hormonal modulation activity of chaste tree may be useful for corpus luteal insufficiency, latent hyperprolactinaemia, mastalgia and perimenopausal complaints.[3]

Active constituents and pharmacodynamics

Chaste tree berries contain a wide spectrum of chemical components, including luteolin-like **flavonoids**, **iridoid glycosides**, diterpenes, essential fatty acids and a high percentage of **essential oil** components including cineole, limonene and sabinene. Its biological activity, which appears to take place mainly in relation to the pituitary-hypothalamic axis, cannot be attributed to a single active constituent.[4]

The most widely studied mechanism of action of chaste tree is the herb's **diterpenes** interplay with dopamine receptors, particularly the D2 receptor. This action inhibits the secretion of prolactin. This explains its efficacy in the treatment of conditions associated with hyperprolactinaemia, particularly PMS and menstrual irregularities. One study on healthy males suggested that higher doses of the herb decreased prolactin secretion while lower doses increased secretion, suggesting that the effects of chaste tree may well be dose-dependent.[7]

Furthermore, some studies have suggested that chaste tree may bind to oestrogen receptors and have a beta-endorphin-like activity.[8]

Summary of clinical evidence

Premenstrual syndrome (PMS)

A multicentre, prospective trial on 50 patients with PMS investigated the effects of a 20mg standardised extract (Ze440) taken daily over three full menstrual cycles. At the conclusion of the trial, a 42.5% reduction in PMS symptoms, as measured by the validated Moos' menstrual distress questionnaire (MMDQ), was observed. The duration of PMS was reduced by 20%. In follow-up assessments over a further three months, symptoms were seen to gradually return after cessation of treatment.[9]

A double-blind, placebo-controlled, parallel-group, multicentre study randomised 162 patients with PMS, ranging from the ages of 18-45, into four groups: a placebo group and three treatment groups given either 8mg, 20mg or 30mg daily doses of standardised extract of chaste tree (Ze440). All patients were assessed using visual analogue scales (VAS) that measured anger, bloating, breast fullness, headaches, irritability and mood alteration. At the conclusion of three full menstrual cycles of treatment, 49% of the patients in the 20mg group presented with no PMS symptoms, and 31% with only mild symptoms compared to 23% and 22% respectively in the placebo and 8mg groups. There were no significant differences in results between the 20mg and 30mg groups.[10]

In a prospective, randomised, placebo-controlled, multicentre trial, 217 women with PMS were randomised into a placebo group or a study group given a daily dose of a standardised chaste tree tablet (BNO 1095) containing 4mg of dried 70% ethanolic extract, equivalent to 40mg of dried herb. After the third full menstrual cycle, the total premenstrual syndrome diary (PMSD) and Premenstrual Tension Syndrome Self-Rating Scale (PMTS) scores were significantly reduced in both groups, but the difference in mean scores between the two groups was significantly lower in the treatment group compared to placebo. A placebo effect of 50% was estimated at the conclusion of the trial, while chaste tree was deemed a safe, well-tolerated and effective treatment for PMS.[11]

In a multicentre, uncontrolled/open study, 1,634 women with PMS were administered a 1.6-3mg tablet of chaste tree daily for three menstrual cycles. Using a study-developed questionnaire completed at the beginning and end of the trial, it was concluded that 93% of subjects reported significant improvements in a range of symptoms including anxiety, depression, cravings, headaches and migraines, fatigue, bowel symptoms, breast swelling, digestive symptoms, cravings and fluid retention. It was concluded that chaste tree is an effective medicine with respect to all somatic and psychological symptoms of heterogeneous and multifaceted PMS.[12]

In an open-label clinical observation trial, 107 women, between the ages of 18 and 50 experiencing migraines associated with PMS were administered 40mg of the standardised chaste tree product, Cyclodynon, daily. At the conclusion of the three-cycle trial, 42% of participants reported more than a 50% reduction in the frequency of monthly migraine attacks and 57% reported a reduction higher than 50% in monthly days with migraine symptoms. Additionally, 66% of the participants reported a dramatic reduction in other PMS symptoms, 26% reported mild reduction and only 8% reported no improvements.[13]

Dosage summary

Liquid extract (1:2): 6-30mL weekly[14]
Dried herb equivalent: 3-17g weekly.[14]

Safety information

There are only limited preclinical safety data available on chaste tree preparations. Some points of potential concern include:

- Prescription of chaste tree is traditionally avoided in pregnancy, although some practitioners utilise its potential progesterogenic effects as a safeguard against miscarriage during the first eight weeks of gestation.[4,15]
- While speculation has been made about the use of chaste tree and the oral contraceptive pill (OCP), several clinical trials involving women taking the OCP have confirmed that chaste tree still improves PMS symptoms and does not affect the OCP.[4]
- Due to insufficient safety data available on chaste tree and oestrogen-dependent tumours, patients who suffer or suffered from an oestrogen-sensitive cancer should consult their healthcare practitioner before use.[4]
- Because of the possible dopaminergic and oestrogenic effects of chaste tree, interactions with dopamine agonists, dopamine antagonists, oestrogens and anti-oestrogens cannot be excluded.[4]
- A 2005 review of the safety of chaste tree found that the herb may have some adverse effects, including nausea, headaches, digestive disturbances, skin irritations and exacerbated menstrual symptoms, but that these effects are mild and easily reversible.[15]

References

1. Hechtman L. Clinical naturopathic medicine. Sydney: Churchill Livingstone Elsevier, 2012.
2. *Vitex agnus-castus*. Alt Med Rev 2009;14(1).
3. Bone K, Mills S. Principles and practice of modern phytotherapy, 2nd edition, 2013. Sydney: Churchill Livingstone Elsevier, 2013.
4. Braun L, Cohen M. Herbs and natural supplements: an evidence-based guide, 4th ed. Sydney: Churchill Livingstone Elsevier, 2014.
5. World Health Organisation (WHO). *Fructus agni casti*. Monographs on selected medicinal plants, vol. 4, 2009. Geneva: WHO, 2009.
6. Chaste Tree. Health Canada, 2009. Viewed 15 February 2017, http://webprod.hc-sc.gc.ca/nhpid-bdipsn/monoReq.do?id=274
7. Merz P, Gorkow C, Schrödter A, et al. The effects of a special Agnus castus extract (BP1095E1) on prolactin secretion in healthy male subjects. Exp Clin Endocrinol Diabetes 1996;104(06):447-453.
8. European Medicines Agency. Assessment report on *Vitex agnus-castus* L., fructus. London: EMA, 2010.
9. Berger D, Schaffner W, Schrader E, et al. Efficacy of *Vitex agnus castus* L., extract Ze 440 in patients with pre-menstrual syndrome (PMS). Arch Gynecol Obstet 2000;264(3):150-153.
10. Schellenberg R, Zimmermann C, Drewe J, et al. Dose-dependent efficacy of the *Vitex agnus castus* extract Ze 440 in patients suffering from premenstrual syndrome. Phytomed 2012;19(14):1325-1331.
11. He Z, Chen R, Zhou Y, et al. Treatment for premenstrual syndrome with *Vitex agnus castus*: a prospective, randomized, multi-center placebo controlled study in china. Maturitas 2009;63(1):99-103.
12. Loch EG, Selle H, Boblitz N. Treatment of premenstrual syndrome with a phytopharmaceutical formulation containing *Vitex agnus castus*. J Womens Health Gend Based Med 2000;9(3):315-320.
13. Ambrosini A, Di Lorenzo C, Coppola G, et al. Use of *Vitex agnus-castus* in migrainous women with premenstrual syndrome: an open-label clinical observation. Acta Neurol Belg 2013;113(1):25-29.
14. British Herbal Medicine Association (BHMA). British herbal pharmacopoeia, 4th ed. Exeter: BHMA, 1983.
15. Daniele C, Thompson Coon J, Pittler MH, et al. *Vitex agnus castus*: a systematic review of adverse events. Drug Saf 2005;28(4):319-332.

MM.2368 BC_0704_CHASTE_TREE_MGRAPH_220318_D5

BioCeuticals®
A division of FIT-BioCeuticals Limited
Unit 1/Level 1, 85 O'Riordan Street
Alexandria NSW 2015
(+61) 2 9080 0900
www.bioceuticals.com.au