

New Uses for Chaste Tree

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Traditional Use

Chaste Tree is a native of Greece and Italy and the ripe berries have a long history of use in the Mediterranean area as a remedy for a variety of gynaecological problems. In more modern times it has been used by Western herbalists primarily to treat premenstrual symptoms. However relatively new research expands our understanding of Chaste Tree and extends its uses.

Dopaminergic Activity

Much of our recent understanding of Chaste Tree comes from dated German research published in the early 1960s. Based on this research it was believed that Chaste Tree increased the production of progesterone from the corpus luteum by stimulating the release of LH from the anterior pituitary. This was thought to be the mechanism behind its efficacy in the treatment of PMS. However, new research provides us with a very different understanding of how this herb may exert its therapeutic effects.

It is now known that Chaste Tree has dopaminergic activity,¹ which can also explain its success in treating gynaecological conditions (including PMS), many of which may be related to high prolactin levels. Dopamine and compounds of similar molecular structure inhibit prolactin secretion from the anterior pituitary. Increased prolactin inhibits corpus luteal development thereby indirectly reducing the secretion of progesterone in the luteal phase of the menstrual cycle. Therefore, Chaste Tree may increase progesterone by reducing prolactin secretion rather than by increasing LH. Increased prolactin levels are associated with premenstrual mastalgia, corpus luteal insufficiency and infertility. In many cases the hyperprolactinaemia may not be constant and is referred to latent hyperprolactinaemia (LHP), where prolactin is raised by stress and/or premenstrually.

The active constituents thought to be responsible for the dopaminergic activity of Chaste Tree are the diterpenes (not the flavonoids (casticin)).² New diterpenes are still being discovered but to date the most active of these are relatively nonpolar and probably cross the blood-brain barrier. If this is the case Chaste Tree may be a beneficial

adjunct in the treatment of patients with Parkinson's Disease.

Melatonin Release

Dioscorides, in his writing about Chaste Tree, stated, "makes the menses come on earlier, detaches the embryo, attracts the milk, goes to your head and brings sleep". Although Chaste Tree is not commonly used to improve sleep, the results of a clinical trial published in 2003³ may change this. In this open, placebo-controlled study, the effect of Chaste Tree administration on the circadian rhythm of melatonin secretion was measured. The 20 male participants were given either placebo or one of 3 different doses of a Chaste Tree extract (corresponding to approximately 0.6 to 2.4 g/day of dried berries), given in divided doses 3 times daily.

The administration of Chaste Tree caused a dose-dependent increase of melatonin secretion, especially during the night, when compared to placebo treatment. Total melatonin output was approximately 60% higher in the participants taking Chaste Tree and began approximately 1 hour after the light was turned off. The authors observed that the promotion of sleepiness observed by some patients taking Chaste Tree during the trial might be a result of the stimulation of endogenous melatonin secretion.

Dosage

According to a survey conducted in the UK in 1997 the average dose of Chaste Tree was approximately 500 mg/day (dried herb equivalent [DHE]). In Australia the majority of practitioners appear to use a dosage range of DHE 500 mg to 1000 mg/day. Clinical trials in PMS and mastalgia have used DHE of approximately 120 to 240 mg/day. However, doses used to influence melatonin levels were much higher (0.6 to 2.4 g). In conditions such as endometriosis and fibroids where a significant oestrogen antagonist effect is needed, doses of around 2 g/day DHE may be required. The use of Chaste Tree in the treatment of PCOS is controversial and may depend on the hormonal profile of each individual patient. It will be most indicated in cases where prolactin is elevated and

dosage will be influenced by the level of prolactin. An important point to remember when considering dosage is that of extract quality. Based on current research information it appears that the diterpenes are major constituents, so any Chaste Tree product used should

contain a broad-spectrum extract, containing sufficient levels of these constituents.

The table below lists suggested dosage for a number of different conditions.

Condition	Dosage (dry herb equivalent)	Rationale
Premenstrual symptoms	200 to 500 mg/day	Based on clinical trials and clinical observation
Corpus luteal insufficiency	200 to 500 mg/day	Based on clinical trials
LHP, and infertility associated with LHP	200 to 500 mg/day	Based on clinical trials
Uterine fibroids, endometriosis	Up to 2000 mg/day in divided doses given 2-3 times per day	This higher dosage may be required to exert a significant oestrogen antagonist effect
Hyperprolactinaemia	Up to 2000 mg/day in divided doses given 2-3 times per day (the dosage will be influenced by the prolactin level)	To exert a significant dopaminergic effect, thereby reducing prolactin secretion
PCOS	200 to 1000 mg/day 1000 to 2000 mg/day in divided doses given 2-3 times per day	In cases of moderate prolactin excess In cases of higher prolactin levels
Sleep disorders including poor sleep maintenance and problems associated with shift work and jet lag	1500 to 2500 mg/day in divided doses given 2-3 times per day	Based on clinical trial assessing melatonin secretion

REFERENCES

¹ Sliutz G et al. *Horm Metab Res* 1993; **25**(5): 253-255 cited in Mills S, Bone K. *Principles and Practice of Phytotherapy: Modern Herbal Medicine*. Churchill Livingstone, Edinburgh, 2000.

² Wuttke W, Jarry H, Christoffel V et al. *Phytomed* 2003; **10**: 348-357

³ Dericks-Tan JS, Schwinn P, Hildt C. *Exp Clin Endocrinol Diabetes* 2003; **111**(1): 44-46

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