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# **Is there a role for Western herbal medicine in treating cyclic perimenstrual pain and discomfort?**

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## **Keywords**

Cyclic perimenstrual pain and discomfort, dysmenorrhea, Herbal medicine, irregular periods, premenstrual syndrome, *Vitex agnus-castus*

## **Abstract**

Conventional treatments for cyclic perimenstrual pain and discomfort whilst numerous and diverse, have drawbacks including side effects, interference with women's reproductive function and, importantly, failure to address symptoms. Many women turn to herbal medicine to treat the myriad menstrual symptoms. Clinical evidence supports the efficacy of *Vitex agnus-castus* but other medicinal herbs typically used by Western herbalists for treating menstrual symptoms are unsupported by clinical trials. This raises concerns around the efficacy and safety of these herbs. Women's treatment options need to be extended and individualised, where current conventional strategies fail, requiring appropriate clinical trials of potentially useful herbal medicines.

## **Is there a role for Western herbal medicine in treating cyclic perimenstrual pain and discomfort?**

Conventional treatments for cyclic perimenstrual pain and discomfort (CPPD) are diverse and numerous<sup>1</sup>. Many of these treatments have drawbacks including significant costs to users and the health system, some unacceptable side effects<sup>1</sup>, interference with women's reproductive function and, importantly, for up to 40% of sufferers a failure to address their symptoms<sup>1</sup>. In response, many women have opted to use complementary and alternative medicine (CAM) - a range of diverse health-related practices and products located predominantly outside the conventional medical curriculum and profession<sup>2</sup> - to treat CPPD symptoms<sup>2-4</sup>. In particular, women who experienced endometriosis and/or frequent premenstrual syndrome (PMS), irregular periods or dysmenorrhea were significantly more likely to consult a naturopath/herbalist than women who did not suffer from these menstrual issues<sup>2</sup>.

Reliable, robust, scientific evidence regarding the efficacy and safety of different CAM for treating CPPD is required to convince stakeholders, including conventional medical practitioners, that such treatments are viable, effective and safe. Such evidence is also important to health policymakers' efforts to fund the efficient integration of proven CAM thereby extending CPPD treatment options available to women.

While many Western herbalists (WHs) prescribe medicinal herb combinations tailored to women's needs, *Vitex agnus-castus* (chaste tree), *Paeonia lactiflora* (white peony), *Angelica sinensis* (Dong quai) and *Actaea racemosa* (black cohosh) are core herbs favoured for treating all four CPPD symptoms. WHs perceive there to be a high level of efficacy for herbal

medicine in treating dysmenorrhea, PMS, heavy and irregular periods, with low levels of adverse effects and a potentially positive cost to benefit ratio <sup>5</sup>.

So the questions addressed here are two-fold - is herbal medicine a viable CPPD treatment option? And how well supported are the efficacy and safety of different medicinal herbs in treating CPPD?

### ***Vitex agnus-castus (VAC)***

VAC is one of the most investigated medicinal herbs for the treatment of CPPD symptoms. Since 2001, seven published systematic reviews have reported that : VAC reduced premenstrual dysphoric disorder (PMDD) symptoms by more than 50% after 2 months, an effect equal to selective serotonin reuptake inhibitors <sup>6</sup>; VAC was equal to or better than vitamin B6 in treating PMS, with both providing around 48% improvement <sup>6</sup>; and efficacy rates for VAC were between 52% to 85% compared to those for placebo which were between 24% to 56%, after 3 cycles of treatment <sup>6</sup> with improvement in both physical and psychological domains in PMS and PMDD <sup>6</sup>. Use of oral contraceptive pills did not appear to affect the results achieved with VAC <sup>6</sup> and clinical trials of VAC treatment in dysmenorrhea, have found it to be as effective as oral contraceptives <sup>7</sup> and mefenamic acid in menstrual pain reduction <sup>8</sup>. In treating cyclical mastalgia VAC reduced breast discomfort by between 45% to 85% within three months of treatment <sup>9</sup>.

According to a systematic review of the adverse events (AEs) associated with VAC, these were assessed as mild, reversible and equivalent to placebo. AEs with the highest incidence, reported by 2-5% of 9335 users, were nausea, gastro-intestinal disturbances, headache and

acne<sup>10</sup>. Apart from a single serious AE of peripheral ischemia, deemed as a ‘probable’ result of VAC, its use is considered to be without serious risks<sup>6, 10</sup>. There is a theoretical possibility that VAC could interact with drugs that modulate dopamine and pituitary-based hormone therapies although no such interactions have yet been reported<sup>10</sup>. Although VAC was found to have no effect on the composition of breast milk its safety during pregnancy and lactation has not been established<sup>10</sup>.

### ***Angelica sinensis, Paeonia lactiflora and Actaea racemosa***

For *Angelica sinensis*, *Paeonia lactiflora* and *Actaea racemosa*, there are no available clinical trials corroborating their efficacy in treating CPPD. Scientific evidence of their potential benefits for CPPD relies on pre-clinical studies of pharmacological activity in what is a complicated, incompletely understood and multifactorial etiology<sup>1</sup>.

What we do know from pre-clinical data for *Angelica*, that may be relevant to CPPD treatment, includes a potential: for anti-inflammatory activity<sup>11</sup>; for reducing stress/depression via a brain neurotrophic factor<sup>12</sup>; for normalising blood cell profiles<sup>11</sup>; as a progesterone antagonist reducing heavy bleeding<sup>13</sup> and to alter mood and relax muscles through GABAminergic<sup>14</sup> and serotonergic receptor sites<sup>15</sup>. Putative phyto-estrogenic activity may also mimic reproductive hormone therapy<sup>13</sup>. However, *Angelica*’s anticoagulant properties contra-indicates its use in heavy periods<sup>11</sup>. As for *Paeonia*, it has been shown to have potential anti-depressant activity, raising serotonin and dopamine levels, through inhibition of monoamine oxidase activity<sup>16</sup> and it may also relieve dysmenorrhea through

analgesic <sup>17</sup> and anti-inflammatory <sup>17</sup> properties, inhibiting both leukotriene B4 and prostaglandin E2 production <sup>17</sup>.

Although traditionally used in treating menstrual dysfunction <sup>18</sup> no trials have assessed *Actaea*'s effectiveness in alleviating menstrual problems. *Actaea* lacks hormonal activity <sup>18</sup>, but pre-clinical studies indicate it is anti-inflammatory <sup>19</sup>, analgesic <sup>19</sup> and has GABA-A <sup>20</sup> binding properties, possibly therefore relieving dysmenorrhea. *Actaea* also interacts at serotenergic <sup>18</sup>, dopaminergic <sup>18</sup> and opioid <sup>18</sup> receptor sites potentially influencing mood-related PMS issues. Additionally, *Actaea* may alter reproductive hormone levels through pituitary function <sup>18</sup> and reduce excessive bleeding by inhibiting plasminogen activation <sup>21</sup>. So whilst preclinical data indicate *Actaea* has the potential to benefit CPPD, credible evidence of its clinical efficacy is lacking.

### **So is Western herbal medicine an option for CPPD?**

Currently, evidence suggests a minimum efficacy of 50% and a good safety profile for VAC as a treatment option for CPPD, particularly PMS/PMDD. However, the other commonly used medicinal herbs at present have little scientific validation of their efficacy via clinical trials although none of them have been associated with serious AE concerns, when properly sourced <sup>22</sup>.

There remains little objective, scientific support for three of the four core medicinal herbs used by WHs for CPPD patients. This does not necessarily preclude them from having a valuable place in the treatment of CPPD. Lack of financial incentives hamper more extensive

research of medicinal herbs through RCTs that could verify their efficacy in CPPD treatment, but in an environment demanding greater scientific corroboration of CAM, anecdotal evidence and traditional credentials alone are insufficient to encourage its acceptance. Conventional health providers and policymakers will inevitably remain sceptical and wary of adopting Western herbal medicine without more compelling scientific evidence.

Seeking out additional treatments are none-the-less desirable given the current failure of conventional therapies to effectively treat CPPD. Currently, conventional health practitioners and academics in the field of gynecology have urged the need for treatments to be individualised, possibly requiring concurrent use of several treatment approaches<sup>5</sup>. Inherent in WHs' practice is the blending of medicinal herbs, tailored to address the individual woman's symptoms, much in line with the recommendation for individualising treatment. While credible, high quality, clinical studies of medicinal herbs and the practice of WHs are needed, a realistic paradigm by which to assess their efficacy in treating women with CPPD is also required, one that fulfills the broader need for using individualised therapy in CPPD patient care.

Women are using Western herbal medicines and consulting with WHs to treat CPPD, irrespective of the paucity of robust clinical trials to support much of this practice. This raises concerns around efficacy and safety that need to be addressed with rigorous scientific investigation. Meanwhile, there is a need for additional options to improve the current treatment of CPPD, for which WHs and herbal medicines, may offer real benefits to women, policymakers and practitioners, none more so than conventional health providers who require such information and assurance in order to effectively and safely coordinate care for women with CPPD.

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