Review Article

Vitex Agnus Castus and Menstrual Health: A Review of Therapeutic Potential in Dysmenorrhea

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Abstract

Dysmenorrhea has a significant impact on the quality of life of reproductive aged women during their menstrual cycle. The condition is often overlooked. Severe cramps are the hallmark for primary dysmenorrhea. But severe menstrual cramps and other symptoms may reduce whatever social life women are able to muster. Affecting overall quality of daily life, it lowers work achievement and increases any kind of absenteeism. This paper discusses the division of primary and secondary dysmenorrhea. It also summarizes risk factors that can lead to primary dysmenorrhea, such as the gene predisposition and age-related but it also highlights the role of Vitex Agnus Castus, the traditional Chinese medicine method for relieving physical discomfort and symptoms of primary dysmenorrhea during menstrual periods. Through modulating hormone levels, this product affects the hypothalamic-pituitary-gonadal axis, but has no direct impact on lutein hormone (LH) or follicle stimulating hormone FSH. The extract helps to relieve the psychological and physical symptoms closely associated with dysmenorrhea. Agnus Castus is supported by many clinical studies and has no known drug interactions. Through various studies the extract's solid safety profile makes it a reliable possible alternative treatment for primary dysmenorrhea when compared with traditional therapies. It is non-pharmacological pain relief treatment while providing nutritional values and almost no side effects.

Keywords: Primary Dysmenorrhea, Agnus Castus, Non-Pharmacological Treatment, Menstrual Pain Relief.

Introduction

One of the most prevalent gynaecological conditions affecting women of reproductive age is dysmenorrhea, which is characterized by unpleasant menstrual cramps of uterine origin. Despite being widespread, the illness is typically underdiagnosed because the majority of females choose not to seek medical care. It is categorized as primary or secondary dysmenorrhea (SD) based on its aetiology. One of the most prevalent complaints in both young and adult females is primary dysmenorrhea (PD), which is characterized by painful and spasmodic cramps in

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the lower abdomen that start just before or at the start of menses without any pelvic pathology. It generally starts in adolescence, six to twenty-four months following menarche. Dysmenorrhea pain is often severe on the first day of menstruation, although it can last up to 72 hours and has a clear, cyclical pattern. Even though it is very common and interferes with everyday activities, it is often disregarded and even ignored because many young women would prefer to suffer in secret without seeking medical help. Women view PD as a taboo and an embarrassment, and they believe that the pain is a normal reaction to menstruation and should be accepted. Females with dysmenorrheic symptoms are frequently seen by primary healthcare professionals and thus contribute significantly to the diagnosis, education, comfort, and therapy necessary to maximize the overall results of PD treatment.

The average duration of PD discomfort is 8 to 72 hours, beginning 1 to 2 days prior to the commencement of menses or immediately following the menstrual flow. Apart from lower abdomen and pelvic pain, dysmenorrhea is typically accompanied with common symptoms that fall into two primary categories: psychological and physical symptoms. Systemic, gastrointestinal, and elimination-related physical symptoms are the most frequently encountered. In addition to painful knees and inner thighs, myalgia, arthralgia, and swollen legs, the systemic symptoms include headache, lethargy, weariness, sleepiness/sleeplessness, sore breasts, heavy lower belly, and backache. Increased or decreased appetite, nausea, vomiting, and bloating are examples of gastrointestinal symptoms; constipation, diarrhoea, frequent urination.

In terms of psychological symptoms, mood disorders such anxiety, depression, irritability, and anxiousness might be experienced by dysmenorrheic female. Females experiencing dysmenorrheic pain were shown to have three times the prevalence of depression, anxiety, and extra somatic symptoms. While the heritability of both PD and psychological symptoms may indicate a common genetic variant, the co-occurrence of dysmenorrhea and psychological symptoms may indicate a neurological brain disorder that causes menstrual discomfort. [1,2]

Impact on Quality of Life

High rates of absenteeism from work and school, together with a decline in quality of life, are associated with dysmenorrhea. In a Portuguese study, 8.1% of girls said they had missed work or school because of menstrual pain, which affected everyday activities in 65.7% of cases. Merely 27.9% sought medical assistance. It mostly impacts academic performance in terms of focus, athletic ability, socializing, and academic success. Along with causing sleep disturbances, daytime weariness, and drowsiness, it also affects pain tolerance. Women experience sleep disturbance during the first few days of their periods, and 28% said that their sleep was disturbed by menstrual pain, according to the National Sleep Foundation's Women and Sleep Poll.[3]

Risk Elements

Primary dysmenorrhea is associated with two categories of risk factors: behavioural and non-modifiable. A family history of dysmenorrhea, being younger than 20 years old (symptoms are more severe throughout adolescence), menarche before the age of 12 (since ovulatory cycles are established early), having a monthly flow that lasts longer than seven days, and nulliparity are among the risk factors that cannot be changed. A number of hypotheses, including decreased uterine norepinephrine in the third trimester of pregnancy, neuronal degeneration in the uterus following a term delivery, and decreased endometrial release of prostaglandins following a term delivery, can account for the association between multiparity and a lower risk of dysmenorrhea.[3]

Figure 1: Seeds of Vitex Agnus Castus (33)

Figure 2: Plant of Vitex Agnus Castus [34]

Vitex Agnus Castus

It is an herb which is found throughout the Mediterranean area and in Asia, as far as north west India. It thrives on the banks of rivers and in coastal areas, forming dense thickets. It is a traditional herbal cure used in Anglo-American and European medicine, vitex agnus castus is used to treat a number of female reproductive complaints. The fruit of the Vitex agnus castus, a plant in the Verbenaceae family, is used to treat a number of female reproductive disorders, including low fertility, menopause related complaints, PMS and related cyclic mastalgia, and PMDD, as well as lactation problems. The prevalence of PMS is high around the world. Around the world 40% of women suffers from Premenstrual syndrome (set of physical an emotional symptoms) whereas, another 3–8% (or possibly 13–18%) can be diagnosed with the more severe form of PMDD. About 70% of women have cyclical breast symptoms, and 22%of women are having cyclical mastalgia (breast pain linked to menstrual cycle), which ultimately leads to moderate to extreme discomfort. These frequent issues can all become serious enough to disrupt daily routines and decrease the productivity level. Many women may not favour conventional treatments like hormonal interventions and synthetic antidepressant medications.[4]

The Vitex genus belongs to the Lamiaceae family, which comprises of 7100 species distributed all over the world. The Mediterranean region, central Asia, and Southern Europe all have extensive riverbank and shoreline growth of Vitex agnus-castus (VAC). All of the herb's organs have therapeutic value and have been used for more than 2,000 years, dating back to the time of the ancient Greeks and Romans.

The ripe dried fruit, which is used to make extracts and concentrates, is the most widely utilized portion of the plant. VAC is one of the primary plants used to treat a number of female ailments, including menstruation discomfort and spasmodic dysmenorrhea, according to the ethnomedicine of numerous countries. Vitex agnus has been used in folk medicine to treat various conditions, including eye diseases, acne, snake and scorpion bites, pain, rheumatism, swelling, stomach aches, as an anti-inflammatory and emmenagogue agent. In addition, the plant has been found to have analgesic, anti-inflammatory, antimicrobial, diuretic and digestive properties. The effectiveness of VAC has been supported by scientific reviews. These medicinal benefits have been linked to specific bioactive substances that were separated from VAC fruits, including essential fatty acids (oleic, linolenic, palmitic, and stearic acids), volatile oils (limonene, pinene, and sabinene), flavonoids, tannins, iridoids, diterpenoids, and phenolic acids and their derivatives. Furthermore, one of the most widely used alternative treatments for these conditions is the use of extracts with non-specific side effects. However, VAC extracts are associated with some soft and infrequent side effects, including skin problems, headaches, diarrhoea, vertigo, and palpitations, which disappear after stopping its use.[5]

Through dopaminergic activity via binding to dopamine-2 (DA-2) receptors, these conditions may be affected by Vitex agnus-castus extracts in a prolactin inhibiting manner. Vitex is composed of iridoid glycosides, flavonoids, essential oil and dopaminergic chemicals that are part of the diterpenes, based on phytochemical analysis. The peppery-tasting dried fruits are the most widely used therapeutic form. Nowadays, Vitex is widely used in Europe and countries that speak English and comes in a variety of pharmaceutical forms, such as tinctures, fluid extracts, pills, and homoeopathic preparations.[4]

One non hormonal method is using vitex agnus (vitex agnus castus) which is rich in phytoestrogens (estrogen like compounds). Phytoestrogens have a positive effect on sex hormones and also have antioxidant, antiallergic, anti-inflammatory and antineoplastic activity. Even though their exact pathway of molecular action has not been proven, their effects are reduction of follicle-stimulating hormone and prolactin release and increase

luteinizing hormone secretion by affecting the hypothalamic-pituitary axis. The essential oil of vitex agnus has been traditionally used to treat many problems such as menstrual cramps, general pain, inflammation, sexual dysfunction, and nervous disorders.[6]

It has been said that the corpus luteum and agnus castus have comparable effects. Without specifically influencing luteinizing hormone or follicle stimulating hormone, the mechanism of action might also be linked to dopamine's control of stress-induced prolactin release. Neuroactive flavonoids, β endorphins, and opioid receptors may potentially be involved. Though a comprehensive assessment of the plant's effectiveness is relatively new, it has been used traditionally to alleviate premenstrual syndrome symptoms.[11]

Methods and Material

The protocol was prepared according to Preferred reporting items of Systematic Review and Meta analysis. (PRISMA) guidelines.

Study Design and Participants

The studies reviewed were **randomized, double-blind, placebo-controlled trials** conducted across various centers and locations to assess the effectiveness of **Vitex agnus castus** (VAC) extracts in the treatment of **Premenstrual Syndrome (PMS)**. The inclusion and exclusion criteria varied slightly across the studies but were based on the clinical diagnosis of PMS using the **DSM-III** criteria and self-reported questionnaires. The studies included women aged 18-45 who were not pregnant, lactating, or suffering from any severe medical conditions. A brief summary of each study design follows:

1. **Study 1** (D. Berger et al.)
    - 50 female participants with PMS, randomized to receive **20 mg daily** of **Vitex agnus-castus extract (Ze 440)** for three menstrual cycles.
    - The study was conducted across **three menstrual cycles** with **two baseline** cycles, **three treatment cycles**, and **three post-treatment cycles**.
2. **Study 2** (Mehrangiz Zamani et al.)
    - 134 female participants randomized into **active treatment** (62) and **placebo** (66) groups.
    - 40 drops of **Vitex agnus-castus extract** were administered 6 days prior to menstruation over **six consecutive cycles**.
3. **Study 3** (Zhong He et al.)
    - 128 participants with moderate to severe PMS, randomized into **Vitex agnus-castus treatment** or **placebo** groups.
    - Patients received **VAC extract or placebo** for **three cycles**, with assessments at baseline, Cycle 1, and Cycle 3.
4. **Study 4** (R. Schellenberg)
    - 170 participants, randomized into **active treatment** (86) and **placebo** (84) groups.
    - Participants received **dry extract tablets** of **Agnus castus** daily for **three consecutive cycles**, with assessments of irritability, mood, and other menstrual symptoms.

Interventions

- **Vitex agnus-castus extract** was used as the primary treatment in all four studies, delivered in varying forms (e.g., tablets, drops, or native extracts).
- **Placebo** treatments were matched in appearance to ensure blinding.

Outcome Measures

- **Primary outcomes**:
    - Change in **PMS symptoms** as assessed by self-report questionnaires, including the **Moos Menstrual Distress Questionnaire (MMDQ)** and other symptom-based assessments (e.g., irritability, mood alterations, headache, breast fullness, bloating).
- **Secondary outcomes**:
    - **Global clinical impression** (severity, improvement).
    - **Responder rate** (50% symptom reduction).

Statistical Analysis

- Data analysis was performed using appropriate statistical software (e.g., SPSS or similar).
- For **continuous variables**, comparisons between treatment and placebo groups were made using **Student's t-test** or **ANOVA**, as applicable.
- For **categorical variables**, **Chi-square tests** were used.
- Significance levels were set at **$p < 0.05$** for all studies, with additional levels of significance (e.g., **$p < 0.001$**) used where appropriate.

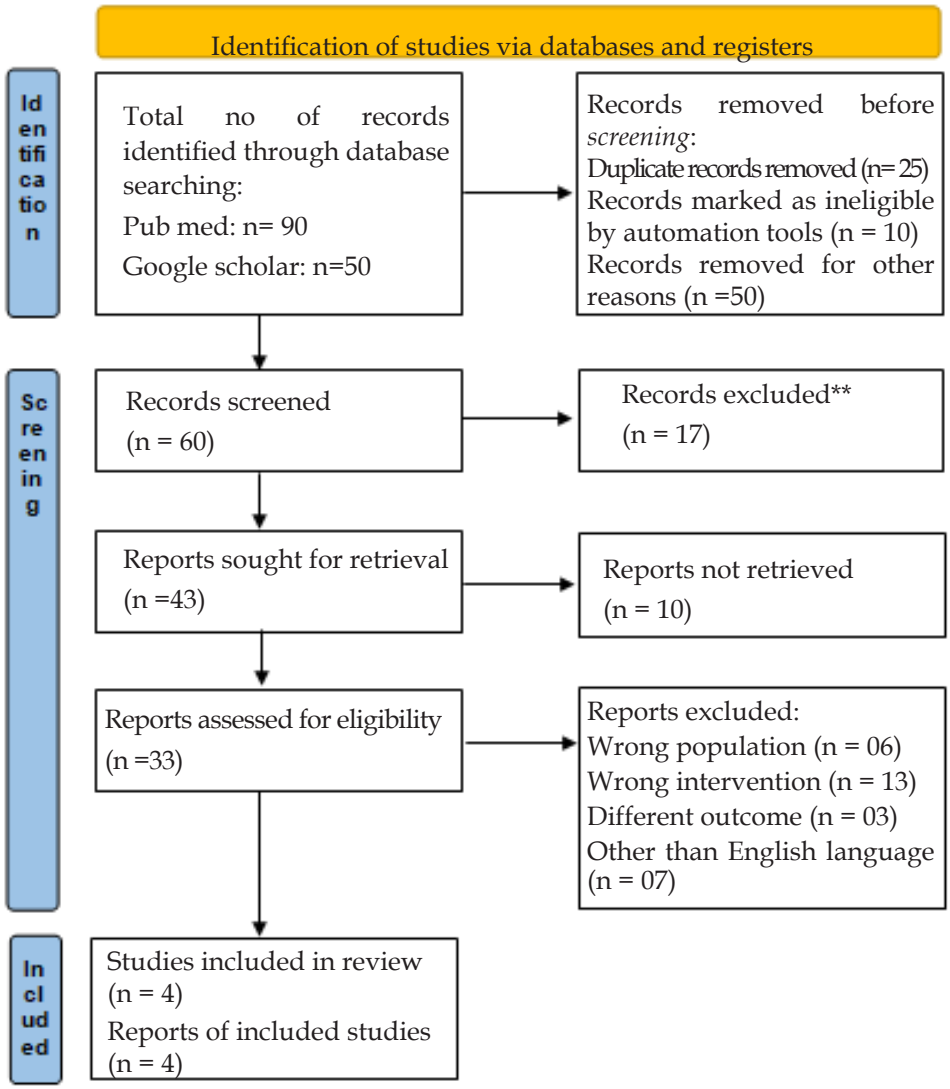
Ethical Considerations

All studies received **ethical approval** from the respective institutional review boards. Informed consent was obtained from all participants before enrollment, and the studies were conducted in accordance with the **Declaration of Helsinki**.

Table 1: Study Comparison Table

Study Tittle	Author	Study Design	Findings
Efficacy of Vitex agnus castus L. extract Ze 440 in patients with PMS	D. Berger, W. Schaffner, E. Schrader, B. Meier, A. Brattström	Randomized, double-blind, placebo-controlled trial, 50 women, 3 treatment cycles, 2 baseline, 3 post-treatment cycles.	**42.5% reduction** in PMS symptoms (MMDQ). Significant improvement observed during treatment phase.
Therapeutic Effect of Vitex Agnus Castus in Patients with PMS	Mehrangiz Zamani, Nosrat Neghab, Saadat Torabian	Randomized, double-blind, placebo-controlled trial, 128 women, 6 treatment cycles with drops of VAC extract.	**Significant improvement** in PMS symptoms ($p < 0.0001$). Psychological factors also played a role in symptom management.
Treatment for premenstrual syndrome with Vitex agnus castus	Zhong He, Rong Chen, Yingfang Zhou, Li Geng, Zhenyu Zhang, Shuling Chen, Yanjun Yao, Junli Lu, Shouqing Lin	Randomized, double-blind, placebo-controlled, multi-center trial, 128 women, 3 treatment cycles.	**Significant improvement** in PMS symptoms (PMSD and PMTS) with VAC treatment. Significant differences between groups ($p < 0.01$).
Treatment for the premenstrual syndrome with agnus castus fruit extract	R. Schellenberg	Randomized, double-blind, placebo-controlled, parallel-group comparison, 170 women, 3 treatment cycles.	Significant improvement in PMS symptoms, **greater improvement** in the active treatment group compared to placebo ($p < 0.001$).

Table 2: Prisma flow diagram



Results and Discussion

Numerous clinical studies have been done on Vitex Agnus Castus which investigated the efficacy of it in treating primary dysmenorrhea. The studies shows that vitex agnus castus when used in appropriate quantity leads to reduction in menstrual pain by acting on hormones. Vitex agnus castus influences the hypothalamic pituitary gonadal axis, leading to changes in hormonal levels that is particularly acting on progestogen and estrogen. Not only for primary dysmenorrhea but also vitex agnus castus has effect on one of the most common premenstrual symptoms, that is premenstrual mastodynia (mastalgia). Vitex Agnus Castus has also beneficial effects on other psychic and somatic symptoms of the PMS. A combination of iridoids and flavonoids can be found in Vitex agnus fruits, and several substances that resemble sex hormones in structure have been identified in the leaves and flowers. Without directly influencing LH and FSH, the mechanism of action might potentially be connected to dopamine's control of stress-induced prolactin release. Additionally, binding to endorphins, opioid receptors, and neuroactive flavonoids may be involved.

Conclusion

Women's self-assessment and the doctor's evaluation both confirmed that Agnus Castus is beneficial in treating primary dysmenorrhea. Following appropriate Agnus Castus ingestion, the symptoms of the participants improved more.

After taking Agnus Castus, participants showed a high level of acceptance and experienced minimal, moderate adverse effects.

According to the study's findings, women who suffer from primary dysmenorrhea that interferes with their everyday activities and lowers their productivity may benefit from using Agnus Castus as a herbal therapy. Compared to chemical therapy, people are more likely to use herbal cures because they rarely cause any side effects. This herb can be recommended by any certified dietitian.

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Ethical Permission: NA

Conflict of Interest: Nil

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