



ENDOMETRIOSIS TREATMENT OPTIMIZATION BY INTRODUCING A SIX-COMPONENT VAGINAL PHYTOCOMPLEX SUPPOSITORY: A CONSERVATIVE APPROACH

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Abstract

Endometriosis is a chronic gynecological condition that significantly impacts women of reproductive age, often leading to pelvic pain, menstrual irregularities, and infertility. Traditional conservative treatments provide symptomatic relief but are often associated with side effects or limited long-term efficacy. This research explores the conservative management of endometriosis through the application of a novel vaginal suppository composed of six herbal components: Ashwagandha, *Nigella sativa* (black seed), Propolis, *Artemisia absinthium* (wormwood), *Cuminum cyminum* (zira), and *Melissa officinalis* (lemon balm). These components are selected for their well-documented anti-inflammatory, immunomodulatory, and antioxidant effects. The study aims to assess the efficacy of this phytocomplex in reducing inflammation and alleviating clinical symptoms. Preliminary methodology includes a 14-day course of treatment in ambulatory patients with evaluation through clinical (VAS scale) and laboratory (CRP, ESR, NLR) parameters. This phytotherapeutic approach represents an innovative, integrative, and potentially safer method in the conservative management of endometriosis.

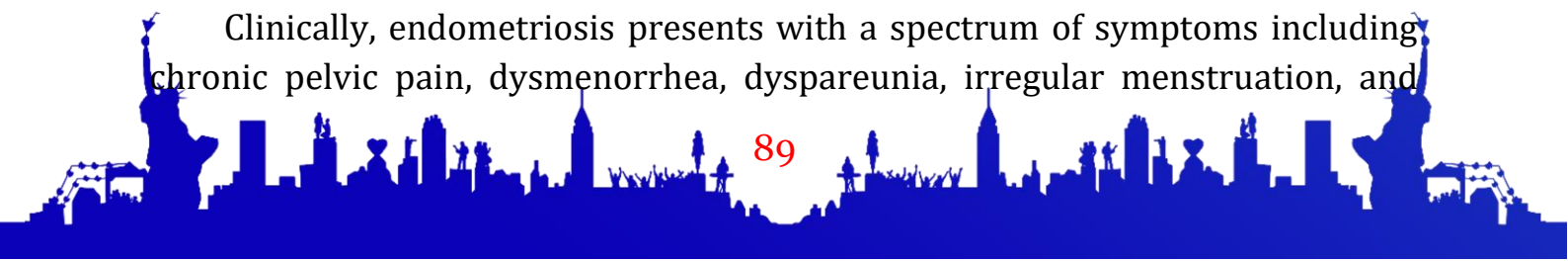
Keywords

Endometriosis, phytotherapy, vaginal suppository, inflammation, CRP, integrative gynecology

Introduction

Endometriosis is a chronic, estrogen-dependent, inflammatory disease affecting approximately 10% of women of reproductive age, which equates to more than 190 million women globally, according to the World Health Organization (WHO). It is characterized by the presence of endometrial-like tissue outside the uterine cavity, commonly involving the ovaries, pelvic peritoneum, and other reproductive structures. This ectopic tissue undergoes cyclic changes similar to the endometrium, leading to recurrent inflammation, fibrosis, and the formation of adhesions and cysts.

Clinically, endometriosis presents with a spectrum of symptoms including chronic pelvic pain, dysmenorrhea, dyspareunia, irregular menstruation, and





infertility. The impact on quality of life is profound—psychologically, socially, and economically—making it one of the most disabling gynecological conditions in women of reproductive age. In addition, delayed diagnosis—often 7 to 10 years after symptom onset—remains a global issue due to the nonspecific nature of the symptoms and limited non-invasive diagnostic tools.

The pathogenesis of endometriosis is multifactorial and not yet fully understood. Key mechanisms include retrograde menstruation, coelomic metaplasia, immune dysfunction, angiogenesis, and oxidative stress. A critical component contributing to disease progression is chronic systemic and local inflammation. Elevated levels of inflammatory cytokines, reactive oxygen species (ROS), and lipid peroxidation products have been demonstrated in patients with endometriosis. These contribute to tissue damage, pain sensitization, and poor reproductive outcomes.

Standard treatment options include hormonal therapy—such as gonadotropin-releasing hormone (GnRH) agonists, oral contraceptives, and progestins—as well as surgical excision of lesions. However, both modalities have limitations. Hormonal therapies often produce undesirable side effects like mood changes, libido reduction, and decreased bone mineral density, and are contraindicated in patients seeking conception. Surgical treatment is invasive and carries a high recurrence rate, with symptoms returning in up to 50% of cases within five years. Consequently, there is growing demand for safer, long-term, and patient-centered conservative treatment approaches.

Phytotherapy, or herbal-based medicine, has gained increasing attention in the field of gynecology as an adjunct or alternative to standard care. Herbal compounds are rich in bioactive molecules with anti-inflammatory, antioxidant, antispasmodic, and immunomodulatory properties, which may be beneficial in managing endometriosis without the adverse effects of synthetic drugs. Moreover, vaginal administration allows for localized therapeutic effects with minimal systemic exposure.

In this context, the current study proposes the use of a novel six-component vaginal phytocomplex suppository composed of *Withania somnifera* (Ashwagandha), *Nigella sativa* (Black seed), Propolis, *Artemisia absinthium* (Wormwood), *Cuminum cyminum* (Zira), and *Melissa officinalis* (Lemon balm). These components are selected based on their synergistic potential to reduce inflammation, neutralize oxidative stress, modulate immune response, and alleviate pelvic pain. Each of them has been previously studied for their





pharmacological properties individually, but their combination in a suppository form for the treatment of endometriosis has not been explored in clinical trials.

Thus, this study aims to evaluate the clinical and laboratory efficacy of this innovative phytotherapeutic formulation in ambulatory patients with endometriosis. By monitoring inflammatory markers such as C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), neutrophil-to-lymphocyte ratio (NLR) and clinical symptoms using the Visual Analog Scale (VAS) for pelvic pain, the goal is to establish a safe, effective, and accessible conservative therapy that could complement or replace standard hormonal regimens in selected patient groups.

Research Objective

To evaluate the clinical and biochemical efficacy of a six-component vaginal phytocomplex suppository in the conservative treatment of endometriosis.

Materials and Methods

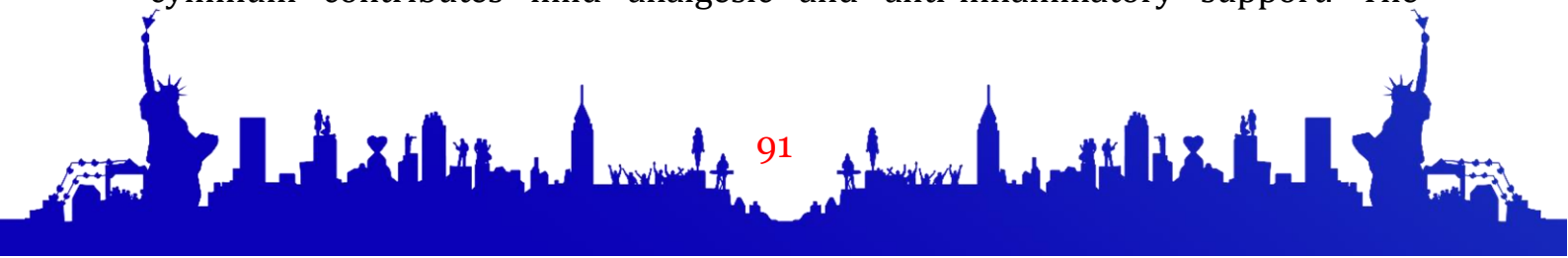
The proposed suppository formulation includes:

- Withania somnifera (Ashwagandha)
- Nigella sativa (Black seed)
- Propolis
- Artemisia absinthium (Wormwood)
- Cuminum cyminum (Zira)
- Melissa officinalis (Lemon balm)

The suppository will be administered vaginally once daily for 14 days. Participants will include 20 outpatient women diagnosed with endometriosis based on clinical and ultrasound findings. Evaluation criteria will include pre- and post-treatment levels of CRP, ESR, and NLR, as well as VAS pain scores.

Expected Results and Discussion

Preliminary phytochemical screening of the six herbs used in the formulation reveals the presence of flavonoids, alkaloids, tannins, and essential oils—all known to modulate inflammatory and oxidative stress pathways. Ashwagandha (*Withania somnifera*) is recognized for its adaptogenic and immunomodulatory effects, which may help stabilize hormonal fluctuations. *Nigella sativa* contains thymoquinone, a potent antioxidant that has shown promise in reducing inflammatory cytokines in reproductive tissue. Propolis is widely studied for its wound healing and anti-infective properties, while *Artemisia* and *Melissa* offer antispasmodic and sedative benefits. *Cuminum cyminum* contributes mild analgesic and anti-inflammatory support. The





combinatory effect of these herbs in a localized vaginal route ensures targeted action with minimal systemic absorption.

Conclusion

The development and application of a six-component vaginal phytocomplex suppository presents a promising adjunct to conventional therapies for endometriosis. Its integration into clinical practice could significantly improve patient outcomes by targeting inflammation, reducing pain, and offering an alternative for those seeking non-hormonal approaches. This strategy may especially benefit patients with contraindications to hormonal treatments. Future studies should aim for larger randomized controlled trials to validate its efficacy and establish standardized dosing.

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