



Polyherbal Formulation for Women's Reproductive Disorders

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Abstract

Women's reproductive disorders such as polycystic ovary syndrome (PCOS), dysmenorrhea, endometriosis, menstrual irregularity, pelvic inflammatory disease (PID), and gonorrhoea represent a significant global health burden. Conventional pharmacological treatments, though effective, are often associated with adverse effects, high costs, and long-term complications. Herbal medicine, particularly the Ayurvedic system, offers a safer and more holistic alternative. This review explores the therapeutic potential of five medicinal plants — *Saraca asoca* (Ashoka), *Asparagus racemosus* (Shatavari), *Symplocos racemosa* (Lodhra), *Tinospora cordifolia* (Guduchi), and *Cinnamomum zeylanicum* (Cinnamon) — in managing women's reproductive disorders. Their key phytochemicals, reported pharmacological activities, and rationale for use in a polyherbal combination are discussed.

The review also highlights existing marketed Ayurvedic formulations and concludes that this combination holds strong potential as a cost-effective, evidence-based therapeutic option, warranting further clinical investigation.

Keywords: Polyherbal formulation, Women's reproductive disorders, Ayurveda, *Saraca asoca*, *Asparagus racemosus*, Phytochemicals, Uterine tonic, PCOS

Introduction

Women's reproductive health disorders affect millions of women worldwide across all age groups. Conditions such as PCOS, dysmenorrhea, endometriosis, and PID not only impact physical health but also significantly reduce quality of life, affecting fertility, mental health, and daily functioning. According to global estimates, PCOS alone affects 8–13% of women of reproductive age, while dysmenorrhea is reported in up to 80% of menstruating women at some point in their lives.

Conventional treatment approaches typically involve hormonal therapies, NSAIDs, antibiotics, and surgical interventions. While these provide symptomatic relief, they come with notable drawbacks — hormonal drugs can cause weight gain, mood disorders, and cardiovascular risks; long-term NSAID use leads to gastrointestinal complications; and antibiotic overuse contributes

to resistance. Furthermore, the cost of sustained pharmacological treatment remains a barrier for a large segment of the population, especially in developing countries.

Ayurveda, India's traditional system of medicine, has long recognized reproductive disorders under the concept of *Yonivyapad* and offers herbal formulations with multi-target activity. Polyherbal formulations, which combine multiple medicinal plants, are known to produce synergistic effects with reduced toxicity compared to single-drug therapies.

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This review aims to consolidate available evidence on five key herbs — Ashoka, Shatavari, Lodhra, Guduchi, and Cinnamon — their phytochemical constituents, pharmacological relevance to women's reproductive health, and their collective rationale in a polyherbal tonic formulation.

Diseases Profile

Polycystic Ovary Syndrome (PCOS) PCOS is one of the most common endocrine disorders in women of reproductive age, affecting approximately 8–13% of women globally. It is characterized by irregular menstruation, hyperandrogenism, and polycystic ovarian morphology. Insulin resistance and chronic low-grade inflammation play central roles in its pathophysiology. Conventional management includes oral contraceptive pills, metformin, and anti-androgens. However, these drugs do not address the root cause and are associated with side effects such as nausea, liver stress, and hormonal imbalance, making long-term adherence difficult.

Dysmenorrhea Dysmenorrhea refers to painful menstruation and is one of the most frequently reported gynecological complaints, affecting up to 80% of menstruating women. Primary dysmenorrhea occurs without any underlying pathology and is driven by excessive prostaglandin production causing uterine contractions. Secondary dysmenorrhea is linked to conditions like endometriosis or fibroids. NSAIDs and oral contraceptives are the standard treatment, but their prolonged use is associated with gastric irritation, cardiovascular concerns, and hormonal disruption.

Menstrual Irregularity Menstrual irregularity encompasses a range of conditions including oligomenorrhea (infrequent periods), amenorrhea (absent periods), and menorrhagia (heavy bleeding). These can arise from hormonal imbalances, thyroid dysfunction, stress, or underlying reproductive pathology. Prevalence varies widely but affects a significant proportion

of women during adolescence and perimenopause. Hormonal therapy is the primary conventional approach, but it does not suit all patients due to contraindications, side effects, and patient preference for non-hormonal options.

Endometriosis Endometriosis is a chronic inflammatory condition in which endometrial-like tissue grows outside the uterus, commonly on the ovaries, fallopian tubes, and pelvic peritoneum. It affects approximately 10% of women of reproductive age and is a leading cause of pelvic pain and infertility. Diagnosis is often delayed by 7–10 years. Medical management includes hormonal suppression therapy and analgesics, while surgical excision offers temporary relief. The condition tends to recur, and current treatments are not curative, highlighting the need for complementary approaches.

Pelvic Inflammatory Disease (PID) PID is an infection of the female upper reproductive tract, including the uterus, fallopian tubes, and ovaries, most commonly caused by sexually transmitted bacteria such as *Chlamydia trachomatis* and *Neisseria gonorrhoeae*. It affects millions of women annually and is a major cause of tubal factor infertility, ectopic pregnancy, and chronic pelvic pain. Antibiotic therapy is the cornerstone of treatment, but recurrence is common and antimicrobial resistance is an increasing concern, reinforcing the relevance of plant-based antimicrobial and anti-inflammatory agents.

Gonorrhoea Gonorrhoea is a sexually transmitted infection caused by *Neisseria gonorrhoeae*, which preferentially infects the mucous membranes of the reproductive tract. In women, it often presents asymptotically but can progress to PID, infertility, and increased HIV susceptibility if untreated. The WHO estimates over 82 million new cases globally each year. The emergence of multidrug-resistant strains is a growing public health concern, and the antimicrobial properties of several herbal constituents offer a promising supplementary avenue.

Herb Profiles

Herb	Family	Part Used	Key Phytochemicals	Reported Activity
<i>Saraca asoca</i> (Ashoka)	Caesalpiniaceae	Stem bark	Catechins, tannins, glycosides, flavonoids	Uterine tonic, anti-estrogenic, anti-inflammatory, haemostatic
<i>Asparagus</i>	Asparagaceae	Roots	Steroidal saponins	Phytoestrogenic,

<i>racemosus</i> (Shatavari)			(shatavarin I–IV), isoflavones, alkaloids	adaptogenic, galactagogue, immunomodulatory
<i>Symplocos racemosa</i> (Lodhra)	Symplocaceae	Stem bark	Loturine, coloturine, triterpenoids, tannins	Astringent, anti- inflammatory, uterine contractility modulator
<i>Tinospora cordifolia</i> (Guduchi)	Menispermaceae	Stem	Tinosporin, berberine, giloin, polysaccharides	Immunomodulatory, anti- inflammatory, antioxidant, antimicrobial
<i>Cinnamomum zeylanicum</i> (Cinnamon)	Lauraceae	Bark	Cinnamaldehyde, eugenol, proanthocyanidins, tannins	Insulin sensitizing, antimicrobial, anti- inflammatory, antispasmodic

Mechanism and Rationale for the Polyherbal Combination

The concept of polyherbal formulation is rooted in the Ayurvedic principle that combining multiple herbs with complementary actions produces a more comprehensive therapeutic effect than any single herb alone. This synergy allows lower individual doses, thereby minimizing the risk of adverse effects while maximizing efficacy.

In the context of women's reproductive disorders, the five selected herbs target the condition from multiple angles simultaneously: **Ashoka** acts directly on uterine tissue, helping regulate abnormal bleeding and reducing inflammation of the endometrium. Its catechins and tannins confer haemostatic and tonic effects.

Shatavari addresses hormonal imbalance through its phytoestrogenic saponins, supporting ovarian function, regularizing the menstrual cycle, and reducing PCOS-related symptoms. It also provides adaptogenic support, reducing stress-induced hormonal disruption.

Lodhra modulates uterine contractility and reduces leucorrhoea. Its astringent and anti-inflammatory properties complement Ashoka's uterine toning action, particularly in conditions like menorrhagia and PID.

Guduchi provides a strong immunomodulatory and anti-inflammatory backbone to the formulation. In infections like gonorrhoea and PID, its berberine content offers direct antimicrobial activity, while its antioxidant properties counter oxidative stress associated with endometriosis.

Cinnamon contributes insulin-sensitizing activity (relevant in PCOS), antispasmodic effects useful in dysmenorrhoea, and broad-spectrum

antimicrobial activity supporting the management of reproductive tract infections.

Together, these herbs address hormonal imbalance, uterine health, inflammation, oxidative stress, and infection — the five key pathological axes in most women's reproductive disorders. This multi-target approach is what makes the polyherbal combination therapeutically rational and scientifically justifiable.

Marketed Formulations

Several Ayurvedic proprietary products available in the Indian market incorporate one or more of these herbs, validating their traditional and clinical relevance:

Product Name	Manufacturer	Key Herbs Included	Indication
M2 Tone Syrup	Charak Pharma	Ashoka, Lodhra, Shatavari	Menstrual irregularity, uterine tonic
Evecare Syrup	Himalaya Drug Co.	Ashoka, Shatavari, Lodhra	PCOS, dysmenorrhoea, menorrhagia
Ashokarishta	Various (classical)	Ashoka, cinnamon, others	Uterine disorders, menorrhagia
Shatavari Kalpa	Dabur, others	Shatavari	Female reproductive tonic
Septilin	Himalaya Drug Co.	Guduchi, Tinospora	Immunomodulation, anti-infective

The existence of these marketed formulations reinforces the therapeutic credibility of the selected herbs. However, most products contain only 2–3 of the five herbs reviewed here, and none specifically combine all five in a tonic

format designed to address the full spectrum of women's reproductive disorders simultaneously.

Conclusion

Women's reproductive disorders remain a major health challenge, and the limitations of conventional therapies continue to drive interest in evidence-based herbal alternatives. The five herbs reviewed — Ashoka, Shatavari, Lodhra, Guduchi, and Cinnamon — possess well-documented phytochemical profiles with complementary pharmacological activities that together address the core pathological mechanisms underlying these conditions. Their combined use in a polyherbal tonic formulation is scientifically rational, traditionally validated, and supported by existing marketed products. However, most available evidence is preclinical or based on individual herbs. Well-designed randomized clinical trials evaluating the combined formulation are strongly warranted to establish standardized dosing, long-term safety, and definitive clinical efficacy before broader therapeutic recommendation.

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