



A Review on Siddha Medicinal Plants used in Female Reproductive System

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ABSTRACT

Reproductive health is a state of complete physical and mental well being in all matters relating to the reproductive system and to its functions and processes. Reproductive healthcare of women is multidimensional. It needs management at various levels. Female reproductive ailments range from pregnancy and related complications, fertility issues and menstrual complications. Nowadays gynecological disorder is emerged as an important indicator for infertility and a resource for research. Siddha serving people with its multifaceted principles like maintaining the health by preventing and treating the diseases, combined with rejuvenation therapies will have an edge in female reproductive health care. Potential hormonal activities in siddha medicinal plants aids in the regulation of menstrual cycle and fertile percentage of women.

Keywords:

Siddha herbs, female reproductive system, infertility, PCOD, Leucorrhoea, menorrhagia

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To access this article online

Website : <http://www.ijrphr.com/>

DOI : 10.121/ijrphr/03.0204.399

Quick response code



INTRODUCTION

Menstrual disorders and reproductive health issues related to women is a natural, physiological process and part of the active life of young women around the world and most women of reproductive age experience it. Complications associated with the reproductive health for women of childbearing age remain a leading source of morbidity and mortality globally. Nevertheless, menstrual disorders are normally not perceived as major health concern, and hence not considered in global reproductive health programs. Reproductive issues and ailments constitute 18% of the global burden of disease for women of reproductive age and are the number one cause of maternal mortality in developing countries (WHO)¹. In India use of the different parts of several medicinal plants to cure specific ailments has been in vogue from ancient times. In modern medicines, plants occupy a very important place as the raw material for some important drugs. Synthetic drugs are effective in controlling different diseases but these synthetic drugs are out of reach of millions of people. It is estimated that around 70,000 plant species have been used for medicinal purposes. The herbs provide the starting material for the synthesis of conventional drugs. Medicinal plants have curative actions due to the presence of complex chemical constituents. The present review is directed towards an analysis of current knowledge on Siddha medicinal plants used in the treatment of female reproductive system disorders.

Relevance of the reproductive disorders:

Leucorrhoea is the commonest disorder affecting women and although it may be caused by physiological conditions like pregnancy or intrauterine contraceptive devices, in the vast majority cases it is caused by Reproductive Tract Infections (RTIs) and very often by STDs. In the clinical history, 16% of our cases gave history of dyspareunia and 47.7% of patients complained of lower abdominal pain.²

Menorrhagia is another common condition afflicting young women leading to anemia with symptoms of weakness, giddiness, backache, edema, congestive heart failure and collapse in extreme cases. PCOS is recognized as the most common endocrinopathy of women. Increased androgen synthesis, disrupted folliculogenesis, and insulin resistance lie at the patho-physiological core of PCOS.

Many of the Siddha medicinal plants mentioned as drugs or diet for above treatments are containing phytoestrogens like flavonoids (isoflavones, coumestans, prenyl flavonoids) and lignans. These phytoestrogens have a chemical structure that is similar to that of 17 beta-estradiol with their competing action on estrogen receptors and will have double edged action - agonist and antagonist. Based on their dose and form, they either stimulate or inhibit the hormones.³

CONTEMPORARY RESEARCH IN SELECTED HERBS:

SARACA ASOKA:

The use of *S. asoca* dried bark, root and flowers to manage uterine abnormalities, menorrhagia, amenorrhea, dysmenorrhea, endometriosis and disorders of the menstrual cycle. The root decoction of *Saraca asoca* is also consumed after delivery for enhanced lochial discharge. Experiments have revealed the ability of bark aqueous extract to stimulate and relax the intestinal muscle, prolong uterine contractions and also as a uterine sedative. The uterine tonic application of the bark has been attributed to its effect on the endometrium and ovaries as an estrogenic stimulant. The ethanolic extract of the bark have been shown to be effective on the gravid uterus. A phenolic glycoside P2 isolated from the species has been shown to produce oxytocic activity both in vitro and in vivo on the animal uteri and in vitro on human myometrial tube.⁴ The *Saraca asoca* bark has a stimulating effect on the endometrium and ovarian tissue and is useful in menorrhagia during uterine fibroids. It also has great benefits for its uterine activity. Flowers of this tree are used to treat cervical adenitis.⁵ The species also show a potent *in vitro* antioxidant and antitumor activity. Anti-breast cancer, antioxidant and toxicological evaluation of the bark extract are promising and indicate that this herbal preparation may have a potential to be used in complementary and alternative medicine for breast cancer therapy.⁶

EUPHORBIA HIRTA

The powdered *E. hirta* showed a galactogenic activity in guinea pigs before puberty by increasing the development of the mammary glands and induction of secretion.⁷ *Euphorbia hirta* aqueous extract induced an increase of milk production and prolactin secretion. This property could be attributed to the substances contained in this plant aqueous extract. These substances would promote a slowing of programmed death of mammary alveolar cells.⁸ *Euphorbia hirta* has been shown to possess potent antimicrobial, anti-inflammatory and anthelmintic activities. *Euphorbia hirta* exhibits pharmacological activities similar to those of quinolones, a group of broad-spectrum antibiotics.⁹

FICUS RELIGIOSA

The leaves are reported to regulate the menstrual cycle. The bark is used as an antibacterial, antiprotozoal, antiviral, astringent, and anti-diarrhoeal agents, as well as in the treatment of gonorrhoea.¹⁰ Bark decoction and leaf powder are used to induce sterility in women and to control the painful urination and white discharge in females.¹¹

LINUM USITATISSIMUM

Linum usitatissimum contains phytoestrogen and was reported to improve PCOS conditions. A significant decrease in testosterone level was reported following a 12-weeks treatment of forty-eight postmenopausal women with *Linum* seeds. The decrease in the level of estradiol could be due to the presence of lignan in flaxseed that may lead to a rise in SHBG production

Table.1 Commonly used siddha medicinal plants for female reproductive system

| NAME OF THE | FAMILY | PART USED | SPECIFIC USES |
|---------------------------|---------------|------------------------|--|
| Saraca asoca | Fabaceae | Bark, flowers | Menorrhagia, DUB, Uterine strengthening, |
| Euphorbia hirta | Euphorbiaceae | Whole plant | Leucorrhoea, Lactation stimulant |
| Ficus religiosa | Moraceae | Leaves Bark Root | Infertility Irregular menstrual cycles |
| Linum usitatissimum | Linaceae | Seeds | Leucorrhoea Menstrual disorders |
| Aloe barbadensis | Aspholodaceae | Leaves Gel Root | Regulates menstrual cycle Leucorrhoea Menorrhagia |
| Asparagus racemosus | Asparagaceae | Tuber Root Stem | Leucorrhoea Infertility Lactation stimulant |
| Trigonella foenum graecum | Fabaceae | Seeds Leaves | Leucorrhoea Dysmenorrhoea Menstrual cycle regulation |

which in turn decreases the level of free estradiol. Moreover, lignan can inhibit aromatase activity thereby decrease estradiol production. Other researches have reported the same results in menopause women.¹²

ALOE BARBADENSIS

Direct effect of Aloe vera extract was evaluated by *in vitro* incubation with PCOS rat ovarian protein. Ovarian steroidogenic enzymes 3 β HSD and 17 β HSD activity in *invitro* incubations yielded activity similar to control and metformin groups, suggesting that aloe vera extract acts directly on the ovarian enzymes.¹³ The purified Aloe protein exhibited a potent antifungal activity against *Candida parapsilosis*, *Candida krusei*, and *Candida albicans* isolated emodin and aloe-emodin from Aloe vera gel specifically suppress breast cancer cell proliferation by targeting estrogen receptor alpha protein stability through distinct mechanisms, which suggests a possible application of anthraquinones in preventing breast cancer cell proliferation through estrogen receptor alpha inhibition.¹⁴

ASPARAGUS RACEMOSUS

The aqueous fraction of the alcoholic extract of the roots at 250 mg/kg, administered intramuscularly, was shown to cause both an increase in the weight of mammary gland lobulo-alveolar tissue and in the milk yield of oestrogen primed rats.

The activity has attributed to the action of released corticosteroids or an increase in prolactin. The root extract enhances folliculogenesis and ovulation, prepares womb for conception, prevents miscarriages, acts as post partum tonic by increasing lactation, normalizing uterus and changing hormones. Its use is also advocated in leucorrhoea and menorrhagia.¹⁵ To overcome stress-mediated reproductive health disorders in women, *Asparagus racemosus* is frequently recommended.¹⁶

TRIGONELLA FOENUM GRAECUM

T. graecum also has a long history of use in the treatment of reproductive disorders, in inducing labor, treating hormonal disorders, increasing milk supply, and reducing menstrual pain.¹⁷ In a PCOS control study, *T. graecum* treatment caused significant reduction in ovary volume and the number of ovarian cysts. Approximately 46% of study population showed reduction in cyst size, while 36% of subjects showed complete dissolution of cyst. It is important to mention that 71% of subjects reported the return of regular menstrual cycle on completion of the treatment and 12% of subjects subsequently became pregnant. Overall, 94% of patients benefitted from the regimen. Significant increases in luteinizing hormone (LH) and follicular stimulating hormone (FSH) levels were observed compared to the baseline values.¹⁸

CONCLUSION

Siddha system of medicine is one of the ancient medical system in India which has immense medicinal plants wealth used for treating many diseases from fever to cancer. Now a day's infertility emerged as an important research. In the present scenario, world's focus turns to the natural conception because of the side effect of chemical drugs. The herbs mentioned in this article are used by Siddha practitioners and from this review it is proved that these herbs have potent hormonal activity. All these herbs are very much promising in the strengthening of female reproductive system and the pharmacological studies emphasizes the importance of these herbs.

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