

Literature review on Soodhaga Chooranam in the management of Polycystic Ovarian Syndrome

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ABSTRACT

Polycystic Ovarian Syndrome (PCOS) is a prevalent endocrine metabolic disorder characterized by chronic anovulation and hyperandrogenesis, affecting a significant percentage of reproductive-aged women globally. Despite its widespread occurrence, PCOS is still not universally recognized as a critical health concern. The disorder's prevalence ranges from 4% to 20% among women of reproductive age worldwide, with a reported prevalence in India of 3.7% to 22.5% based on 2019 data. This review article delves into the potential therapeutic role of the polyherbal formulation Soodhaga chooranam in the management of Polycystic Ovarian Syndrome.

KEYWORDS

Polycystic Ovarian syndrome, Obesity, BMI, Randomized single blind study.

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INTRODUCTION

The Siddha system of medicine, originating in Tamil Nadu, South India, has been practiced for over 5000 years[1], making it an ancient and traditional healing approach. Regarded as one of the oldest forms of treatment in human history, Indian traditional medical systems play a crucial role in addressing global healthcare needs[2].

PCOS stands as a prevalent reproductive endocrine disorder in women, yet it grapples with diagnostic challenges, delayed identification, and less-than-optimal treatment approaches[3]. This condition arises from an imbalance in female sex hormones, resulting in the formation of cysts in the ovarian antral follicles. The conversion of an egg into a 'functional cyst' hinders ovulation, leading to the disruption of the menstrual cycle and causing amenorrhea. The manifestation of multiple cysts on ovarian follicles due to hormonal imbalances defines the characteristic features of PCOS[4].

METHODS AND MATERIALS

This review article conducts a bibliographic search to explore the phytochemical constituents of Soodhaga chooranam. The information is gathered from biomedical and classical literature sources, utilizing databases like Google search and Pubmed, as well as books from the Library of ATSVS Siddha Medical College and Hospital in Munchirai, Kanyakumari.

Ingredients of soodhaga chooranam

Sathakuppai	-	35gms
MaraManjal	-	35gms
Karanjeeragam	-	35gms
Vellam	-	105gms
Sombu Kudineer	-	Adjuvant[5]

Method of preparation

Purified dried Sathakuppai, maramanjal, and Karunjeeragam are combined in equal proportions and finely powdered. Jaggery, also in equal quantity to the powder, is added, and the mixture is stored in a wide-mouth glass container.

Adjuvent : Prepare sombu kudineer

Dosage : Kottaipaakalavu(5gms)

Indication : Relieves kuruthisikkal(relieves amenorrhea)[5]

Individual medicinal plants

Various medicinal plants have been recommended in different Siddha literatures for the treatment of gynecological disorders related to PCOS. The utilization of individual medicinal herbs is highly significant due to their easy availability and cost-effectiveness. The plants specified in Soodhaga choornam for addressing PCOS and associated menstrual irregularities, supported by scientific evidence, are summarized below. Additionally, these plants exhibit "kaippu suvai" (predominantly pungent taste) and "thuvarpu suvai," contributing to the regulation of deranged vatham and kabam. These imbalances are major contributors to irregular menstrual cycles in PCOS conditions, as elucidated in classical Tamil verses provided below.

Sathakuppai:-

Botanical name : Anethum graveolens

English name : Dill seeds

Family : Apiaceae

Part used : Seeds

Actions :
Emmenagogue, Antispasmodic, Stimulant, Carminative[6].

Chemical constituents: Scopoletin[7], Tripetroselinin, Petroselinic acid, Dipetroselinic acid[8].

Evidence in Siddha Literature:-

வாதமோடு சூதிகா வாதம் சிரசுநோய்

மோதுசெவி நோய்கபநோய் மூடுசுரம் டு ஒதுகின்ற

மூலக் கடுப்பு முதிர்நினசம் போகும்

ஞாலச் சதகுப்பை நாடு[9].- (அ.கு)

Inference:

This is recommended for addressing deranged Kabam and soothigavatham (a convulsive disorder, especially due to menstrual abnormalities in young women).

Scientific evidence:

Research involving the ethanol extract of Anethum graveolens has investigated hormonal changes in PCO rats. The experimental animal group treated with Anethum

graveolens showed a significant decrease in progesterone levels and an increase in the estrus cycle[10].

Maramanjai:-

Botanical name : *Coscinium fenestratum*

English name : Tree turmeric

Family : Menispermaceae

Part used : Stem

Actions : Febrifuge, Stomachic, Tonic[11].

Chemical constituents: Berberine, Palmatine, Jatrorrhizine[12].

Evidence in Siddha literature:-

அழன்றகண மூலம் அருசி யுடனே
உழன்ற கணச்சுரமும் ஓடுஞ்-சுழன்றுள்ளே
வீறுசுர முந்தணியும் வீசுமர மஞ்சளுக்குத்
தேறு மொழியனமே! செப்பு [13]
- (அ.கு.)

Inference:-

Coscinium fenestratum is recommended for the treatment of kanachuram and utchuram in children, as well as for hemorrhoids and aguesia, as indicated in Siddha literature[14]. Furthermore, according to T.V. Sambasivampillai Maruthuva Agarathi (Siddha Medical Dictionary), it is known to cure piles, nausea, congenital morbid conditions, and fever, among other ailments[15]. Additionally, as mentioned in Nadkarni, it is employed for the treatment of intermittent fever, dyspepsia, and snake bites[16].

Scientific evidence:

The Phytochemical assay indicated that berberine is the active compound in *Coscinium fenestratum* effective against *Neisseria gonorrhoea*. The average MIC values for purified berberine were 13.51 microg/ml against *Neisseria gonorrhoea* ATCC 49226 and 17.66 microg/ml against 11 clinical isolates. In contrast, the average MIC values for the crude extract of CF against all clinical isolates showed no acute toxicity at the dose of 5g of CF crude extract per kilogram. These findings offer theoretical support for the ethnopharmacological relevance of the antigonococcal activity of *Coscinium fenestratum* and its active compound[17].

karunjeeragam:-

Botanical name : *Nigella sativa*

English name : Black cumin

Family : Ranunculaceae

Part used : Seeds

Actions : Emmenagogue, Galactagogue, Emollient[18]

Chemical constituents: Damascenine, damascenine[19], cholesterol, campesterol,

stigmasterol[20]

Evidence in Siddha literature:-

கருஞ்சீ ரகத்தான் கரப்பனொடு புண்ணும்
வருஞ்சீராய்ப் பீநசமு மாற்றும் அருந்தினால் -
காய்ச்சல் தலைவலியுங் கண்வலியும் போமுலகில்
வாய்ச்ச மருந்தெனவே வை. [21]- (அ.கு.)

Inference:

Nigella sativa is indicated for skin diseases such as eczema, ulcerations, chronic sinusitis, fever, headache, and ocular pain in Siddha literature[22]. Additionally, according to T.V. Sambasivampillai Maruthuva Agarathi (Siddha Medical Dictionary), *Nigella Sativa*, when administered in small doses, is effective for managing dysmenorrhea, a concerning symptom in PCOS condition[23].

Scientific Evidence:

Jasim et al. conducted a study on healthy female rats to investigate the effects of *Nigella sativa* on thyroid function and reproductive hormones over a 30-day period[24]. The hormonal assay revealed a significant improvement in T3 and T4 levels, a decrease in TSH levels, and an increase in LH and GnRh levels, promoting estrogen synthesis. *Nigella sativa* also exhibited antioxidant activity.

Sombu:-

Botanical name : *Foeniculum vulgare*

English name : Fennel seeds

Family : Apiaceae

Part used : Seed

Actions : Carminative, Stomachic[25]

Chemical constituents : Anethole[26], Camphene, limonene, genuine, p-anisic acid, methylchavicol, anisaldehyde[27].

Evidence in Siddha literature:-

யோனிநோய் குன்மம் உருட்சைமந் தம்பொருமல்

பேனமுறு காசம் பீலிகமிரைப் -பீனஉரை

சேர்க்கின்ற வாதமுபோஞ் சீர்பெரிய சீரகத்தால்

மூக்குநோ யில்லை மொழி[28].

(அ.கு.)

Inference:

Foeniculum vulgare is recommended for various conditions including vaginal disease, dyspepsia, indigestion, cough, and liver disease[29]. Additionally, as mentioned in Nadkarni, Foeniculum vulgare fruit is useful in amenorrhea and cases where lacteal secretion is suppressed, aiding in promoting free sweating[30].

Scientific Evidence:

Foeniculum vulgare has served as an estrogenic agent for centuries, with reported effects on increasing milk secretion, promoting menstruation, facilitating birth, alleviating symptoms of the male climacteric, and enhancing libido. The primary constituent of fennel essential oil, anethole, is considered the active estrogenic agent. Some studies suggest that the actual pharmacologically active agents are polymers of anethole, such as dianethole and photo and those (Albert-puleo, 1980)[31].

Vellam:-

Botanical name : Borassus flabellifer

English name : Palmyra palm

Family : Arecaceae

Parts used : Byproduct

Actions :Antibacterial,Antidiabetic,Anti-inflammatory,Antioxidant,Diuretic[32]

Chemical constituents : Lysine, Aspartate, Glutamate, phenylalanine, oleate[33]

Evidence in Siddha literature:-

".....

.....தங்குபனை

வெல்லத்தால் வாதபித்தம்,வீறுகபஞ் சன்னிநோய்

வல்லருசி குன்மமறு மால் "[34]

(அ.கு.)

Inference:

Borassus flabellifer is recommended for mupini, dyspepsia, and ageusia[35]. Additionally, as mentioned in Nadkarni, Borassus flabellifer has therapeutic effects for cough, pulmonary affections, laxative, gastritis, hiccups, gangrenous and indolent ulcers, and carbuncles[36].

Scientific Evidence:

An Nystatin-indicated rat paw edema model was utilized to investigate the anti-inflammatory activity of the ethanolic extract of male flowers (inflorescences) of Borassus flabellifer L. (Arecaceae). The extract at doses of 200mg/kg b.w. and 400mg/kg b.w., along with diclofenac sodium (standard) at 100mg/kg b.w., demonstrated significant anti-inflammatory effects compared to the control group ($p > 0.0001$)[37].

CONCLUSION

The mentioned Siddha medicine, "Soodhaga chooranam," is utilized for the management of PCOS, with its scientific efficacy validated through various animal studies. The increasing incidence of PCOS among women and teenage girls has prompted a national survey by ICMR. The danger lies in the potential consequences of leaving this condition unchecked or undiagnosed, which can lead to infertility and other long-term health concerns. It is emphasized that extensive future research in various aspects is necessary to better highlight the therapeutic values of the Siddha system of medicine. This review article delves into classical literature and Siddha materia medica regarding the concept of PCOS, particularly focusing on the drug Soodhaga chooranam, known for its emmenagogue action.

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