

Gynaecological Benefits of *Anethum graveolens* & *Foeniculum vulgare*

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ABSTRACT

Anethum graveolens [satha-kuppai] and *Foeniculum vulgare* [Perunjchirakam] are mostly used for menstrual disorders and gynaecological disorders. Various researchers have also proved its beneficiary effects in gynaecological disorders. *F.vulgare* can be used to relieve the sign and symptoms on primary dysmenorrhoea. *A. graveolens* and *F. vulgare* has the capacity to increase the production of milk. The ethanolic extract of *F.vulgare* has the efficacy to treat hirsutism. As per siddha concept, these two herbs from Apiaceae family has pungent taste and heat potency which has the capacity to induce ovulation and it is more useful to treat gynaecological disorders. These two herbs posses the uterine contractive action. Present study is done to view the beneficial of *Anethum graveolens* and *Foeniculum vulgare* with respect to its active components, its uses in gynaecological disease & its future scope in management of infertility disease.

Keywords

Gynaecological disorders, sathakuppai, Perunjchirakam, Galactogogue, Anti-hirsutism, Ovulation inductor.

INTRODUCTION

The incidence of infertility is raising in the society due to life style changes and unhealthy food habits. Younger generation is very much addicted to the sedentary life style and forget about the physical exercise. The prevalence of infertility is raising up to 8- 12 % that is 50-80 million during their reproductive life (17). Siddha insists to lead a healthy life both physically and mentally by keeping touch with the laws of nature. Nowadays, unhealthy dietary habits like excessive intake of junk foods, improper timing of diet, lack of exercise, excess stress have made females prone for many gynaecological disorders like dysmenorrhoea, infertility. *Anethum graveolens* & *Foeniculum vulgare* from Apiaceae family these traditional herbs has various medical indications worldwide. (1) *F.vulgare* has been reputed to increased milk secretion, promotes menstruation, facilitate birth, increases libido and also has anti-hirsutism activity. (2)(3). *A.graveolens* has been effective in dysmenorrhoea, postpartum haemorrhage and labour pain. (4)

This review study is focussed on viewing the chemical constituents, activities of *A.graveolens* & *F.vulgare* in the management of major gynaecological disorders & its traditional uses.

Siddha aspect of plants

Anethum graveolens:

- Taste (Suvai): Pungent (Kaarppu), Sweet (inippu) .
- Potency (veeriam): Heat
- Sub taste (Pirivu): Pungent kaarppu.

Foeniculum vulgare:

- Taste (Suvai): Pungent (Kaarppu), Sweet (inippu) .
- Potency (veeriam): Heat
- Sub taste (Pirivu): Pungent kaarppu.



Fig 1 – *Anethum graveolens* seeds



Fig 2- *Foeniculum vulgare* seeds

CHEMICAL CONSTITUENTS

A. graveolens has 1-4% essential oil contains major compounds Carvone(30-60%)Limonene(33%)Phytoestrogen, dillapiole, apiol Flavonoids& tannins.(5). The seeds of *A. graveolens* has mucosal protective action, anti secretory and anti-ulcer activity(18) .It contains quercetin, isoharmentin which are very good anti-oxidant (19) .The dried root of hyperlipidimic activity and improves the biological anti-oxidant status by reducing lipid peroxidation in liver. The plant has a broad spectrum anti-bacterial activity against *E.coli*, *Shigella flexneri*, *Solmonella typhi*, *S. typhimurium*, *P.aeruginosa*.

F. vulgare is well known for its essential oil, it contains Anethole, Fenchonen, Phytoestrogen, estragale, flavonoids.(6) and Quercetein.

TRADITIONAL USES

Both *A.graveolens* and *F.vulgare* has many traditional uses. These two herbs from apiaceae family has kaarppu suvai and veppa veeriam has the capacity to induce ovulation and it is more useful to treat gynaecological disorders. (1).

THE MAJOR GYNAECOLOGICAL USES

Uterine contraction

A.graveolens seed consumption due to its contents & combination such as limonene & tannins increases the contraction of uterus & causes better progress of delivery process, this shortens the first stage of labour.(7).

The essential oil from *F.vulgare* seeds contains anethole which has the effect on uterine contraction, it also reduce the frequency of contraction induced by prostaglandins.(8) Limonene & anethole show contractive effect on uterine myometrium.(9).

Dysmenorrhoea

One of the most gynaecological problems is dysmenorrhoea, which is pain during menstruation. The primary dysmenorrhoea is one where there is no identifiable pelvic pathology. In double blind randomised study by Reza et al. It was demonstrated that *A.graveolens* can be as effective as mefenamic acid in decreasing the pain severity of dysmenorrhoea. (10).

The inhibition of contraction of uterus leads to pain relief in dysmenorrhoea. Based on this the effectiveness of *F. vulgare* can be used to relieve the sign and symptoms on primary dysmenorrhoea. (11)

The powder (chooranam) of *F. vulgare* 1-1/2 grams should take for the dysmenorrhoea (1)

Galactagogue

Adequate breast feeding is must for normal physiological growth of baby especially upto first six month of life. Sometimes if there is inadequate production of milk growth of a baby is likely to be affected. *A.graveolens* and *F.vulgare* has the capacity to increase the production of milk. So it can be used as galactagogue.(6,4).

Anti-hirsutism activity

Idiopathic hirsutism is the occurrence of excessive male pattern hair growth in women who have a normal ovulatory menstrual cycle and normal level of serum androgens, it may be due to androgen metabolism. Due to the presence of anethole and dianethole and its polymers in the *F. vulgare* extract shows variable estrogenic activity, it was found that the estrogen are able to inhibit the synthesis of DHT by increasing the conversion of testosterone into weaker androgens. The ethanolic extract of *F. vulgare* has the efficacy to treat hirsutism (2).

Infertility

Infertility is defined as inability to achieve the pregnancy within a year of unprotected intercourse. 15% of young couples in different societies suffer from infertility due to inappropriate diet, obesity, smoking, psychological stress and genital tract infections are some important factors which can result in infertility. (12). The ethanolic extract and oestrogenic activity of *F. vulgare* has effect on fertility enhancement. (13). Use of oil as Nasal drops (nasiyam), massage (thokkanam), peechu (enema) is beneficial in female infertility. (14).

The composition of *A. graveolence*, *Nigella sativa*, *Coscinium fenesrtratum* each 35 grams, mends with jaggery 105 grams should be taken 5 grams from the mixture twice a day in colocasia esculenta aqueous extract (sombu kudineer) will regulate the menstruation and helps to fertilization (1)

Postpartum haemorrhage

A. graveolens is used in traditional medicine. Atonic uterus is the most common cause of postpartum haemorrhage. These seed extract is useful for the contraction of uterus. A dose of 6.5 gram of dill seeds extract after delivery decreases postpartum haemorrhage due to its contractive characteristics. Limonene & anethum showed contractive effect on uterine myometrium. (9). The leaf extract of *A. graveolens* regulates the puerperal menstrual flow (1)

Postmenopausal female

Normally a one year period of amenorrhoea after the age of 40 are considered as menopause. However Vaginal bleeding occurring at any time after six months of amenorrhoea in a menopausal age should be considered as postmenopausal bleeding. It may be due to malignancy of genital tract, endometrial cancer, cervical cancer and ovarian tumours. (15). *A. graveolens* contains beta-sitosterol and can be used as a source of phytoestrogen. Phytoestrogens have more affinity for estrogen receptor found in brain, bone, bladder and vascular epithelia. In breast and endometrial tissue phytoestrogen acts as anti-estrogenic. When used in proper way it is beneficial in management of breast CA, endometrial CA, and menopause.(16).

DISCUSSION

All these above studies proves that *A. graveolens* and *F. vulgare* is useful in gynaecological disorders like milk production, dysmenorrhoea, postpartum haemorrhage, anti-hirsutism and promotes libido. As per siddha concept, pungent taste (*Kaarppu suvai*) and heat producing potential of a herb (*veppa veeriam*) has the capacity to induce ovulation and it is more useful to treat gynaecological disorders. These two plants are rich in source of phytoestrogen hence can be effectively used in menopausal females for symptoms like hot flush, vaginitis, anxiety and osteoporosis along with this. It also has beneficial as an antioxidant, anti-diabetic, antimicrobial, antispasmodic, anti-osteoporotic, anti-hyperlipidemic and atherogenic activities. Thus it can used widely for treating various diseases.

CONCLUSION

Traditional knowledge regarding the use of these plants is many but the scientific research available today is to support the knowledge about medicinal uses of gynaecological disorders. From the above review author conclude that these plants have wide range of chemical constituents which has many pharmacological effects. It has a great scope in management of various gynaecological disorders. There is a great promise for development of novel drugs from *A. graveolens* and *F. vulgare*.

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