



Case Study

## CLINICAL OBSERVATIONS OF FOLKLORE TREATMENT REGIMEN IN THE MANAGEMENT OF FEMALE INFERTILITY

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### ABSTRACT

Infertility is a global public health issue with an estimated prevalence of infertility ranging from 3.5% to 16.7% in more developed nations and from 6.9% to 9.3% in less developed nations. Female fertility is achieved by coordinated and synchronized functions of *Garbha Sambhava Samagri*. This synchronization may get disrupted due to various factors or dysfunction of reproductive tract like *Artavadushti*, *Asrugdara*, neuroendocrine system like *Apanavayu vikruti*, and immune system or by any severe systemic disease.

According to Ayurveda, essential factors to achieve fertility are described as *Garbha Sambhava samagri*, incorporating disease free *Kshetra*, *Rutu*, *Ambu* and *Bija* and normal psychology (mind) and regulated *Vata* function at the general as well as specific level are also essential. Many formulations are described in Ayurvedic texts for the management of Infertility. But in the present paper an attempt is being made to present clinical observations of one folklore regimen comprising *Jatiphala churna* (given three days during *Rutukala*) and *Ashvattha Jata* (given during secretory phase). Clinical observations of four infertility cases are presented in the present paper; among the four, three are primary infertility cases and one secondary infertility case. Among the four, two cases got conceived and in two cases regularization of menses, ovulation induction observed. On overall observation, this regimen is giving encouraging results.

### INTRODUCTION

Infertility is a global public health issue and increasing trends is seen even in India. A review study carried out on 25 population based surveys, and reviewing 172413 sample women, estimated the prevalence as- 12-month prevalence rate in 3.5% to 16.7% cases in more developed nations and from 6.9% to 9.3% in less-developed nations, with an estimated overall median prevalence of 9%. Female fertility can be affected by dysfunctions of menstrual cycle, defects in uterus and adnexa, neuroendocrine disorders, and immune system or severe systemic disorders.

According to Ayurveda essential factors to achieve fertility are four, *Kshetra* (female reproductive system), *Rutu* (prophylactic phase with ovulation), *Ambu* (nourishing fluids to support conception and growth of embryo) and *Bija* (male and female gametes) and psycho-normalcy and regulated *Vatu* function at the general as well as specific level are also essential.

#### Common Causes of Female Infertility

- Failure to ovulation
- Problems in the menstrual cycle
- Structural problems of the reproductive system
- Infections
- Implantation Failure
- endometriosis
- Polycystic Ovary Syndrome (PCOS)
- Primary Ovary Insufficiency (POI)
- Uterine fibroids
- Autoimmune disorders

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The most common overall cause of female infertility is the failure of ovulation, which occurs in 40% of women with infertility issues<sup>[1]</sup>. Anovulation is known as *Abija* in Ayurveda and usually it is the result of *Artavadushti*, different *Yonivyapad*, *Ajata Rajas*, *Yoniarshas* etc. Anovulation is seen in various ovarian or gynaecological conditions, such as primary ovarian insufficiency, polycystic ovary syndrome, diminished ovarian reserve due to aging etc. Endocrine disorders, such as thyroid disease or problems with the hypothalamus, affect the Hypothalamo-Pituitary-Ovarian (H-P-O) axis and result into different functional disorders.

*Vata* is the importance humour and plays a vital role in achieving conception in infertility. Without the *Vata*, the *Yonirogas* does not occur in female. Formation of functional layer of endometrium is necessary for the complete ovum development. *Vata* plays significant role in sending the signals through feed-back to H-P-O axis for regeneration of endometrium and helps in *Bijakalpa* (oocyte development). *Kapha* helps in proliferation of endometrium through the *Upachaya* action. *Pitta* helps to facilitates metabolism of oestrogen on endometrium and causes proliferation of endometrium. Similar to other functions in the body, three *Dosha* also play role in the *Bijodgama/Phalodgamakala*. *Kapha dosha* is helpful in complete formation of follicle and development of *Bija* (ovum); *Pitta* helps in the maturation of ovum and *Vata* helps in release of ovum from the ovary. Vitiating in the physiology of formation of *Artava* certainly alters the normal formation of endometrium, further causes the insufficiency of luteal phase or sub-ovulatory changes in the endometrium.

#### Drugs schedule

Medicines	Dose	Latin name	Time	Duration	Anupana (Vehicle)
<i>Jatiphalachurna</i> + <i>Mishri</i>	1gm 1gm	Myristica fragrans Rock candy	BD	3 days starting on 9 <sup>th</sup> to 11 <sup>th</sup> day of menses	Normal water
<i>Ashvattha Jata</i>	3 gm	Ficus religiosa	BD	13 <sup>th</sup> day to 30 <sup>th</sup> day of menses	Godugdha 100ml

#### Case 1: Primary Infertility patient

A 27 years old married women having complaint of wants issue since 3 years came to the Hospital and outpatient department of Prasutitantra and Striroga Department, NIA, Jaipur. The patient was very much worried regarding her issue as her mother in law was pressurizing her and creating a chaos on daily basis. She has gone through modern medications for achievement of conception, but did not achieve conception. She came in our OPD along with her USG report and other baseline investigations. According to the sonography Anovulation was found as the specific cause in this case. Drugs quoted above were prescribed

When *Artava* gets vitiating by different humours then that is resulting into *Artavadushti* and *Abija* (anovulation) is the common *Upadrava*. Based on the symptoms *Vataja*, *Pittaja*, *Kaphaja*, *Putipuya*, *Kshinaartavadushti* appear to interfere with the formation of the endometrium/functioning of endometrium<sup>[1]</sup>. *Vatadosha* plays a key role in the formation of *Bija*, excretion of menstrual blood. Hence *Vata* (*Apanavata*) vitiating also leads abnormal quantity, characters of menstrual blood. *Vata* if it fails to bring *Rasa/Rakta* to the *Artavavashrotus* – then *Artava alpata* is seen, when it fails to bring menstrual blood to *Yonimukha*, then, *Yathocitakala adarshana* (delayed periods or amenorrhoea) is seen. *Agni* at the level of *Artava* is also important factor that helps in growth of the follicle and maturation of oocyte.

#### MATERIAL AND METHODS

Patients presented with features suggestive of infertility were examined; the demographic profile, associated gynaecological symptoms were noted. Laboratory investigations like blood and urine were also documented. To rule out any pelvic pathology, Ultrasonography also advised to the patient. Then a clinical diagnosis was made and then confirmed by examination and investigations. Clinical observations of one folklore regimen comprising *Jatiphalachurna* and *Ashvattha Jata* (*Peepal Jata*) *churna* were selected to see the ovulation induction and their support in endometrial proliferation and implantation promotion effects in infertility cases. *Jatiphalachurna* and *Ashvattha Jata* powders combination is highly practicing folk-lore regimen in female infertility in Jaipur, Rajasthan, is chosen for this case series.

to the patient. *Jatiphalachurna* along with *Mishri* with normal water was given from 9<sup>th</sup> to 11<sup>th</sup> day of cycle. Then from 13<sup>th</sup> to 30<sup>th</sup> day *Ashvattha Jata* (aerial roots) *Churna* was given with *Godugdha*. Patient took the medications for one month. Next month she missed her period, she came to our OPD. Urine for pregnancy test was done, the result was found positive.

**Case 2: Secondary Infertility**

30 years old married women having complaint of wants issue since 1 year came to the Hospital and outpatient Department of Prasutitantra and Striroga Department NIA, Jaipur. She had one child and trying to conceive again, but could not succeed. So, she came to our OPD. She has brought her investigations. No specific cause elicited from the investigations. Patient was prescribed above regimen for two menstrual cycles. After completion of same regimen for two menstrual cycles, she got conceived.

**Case 3: Primary Infertility with PCOD with 2-3 months delayed periods**

A 26 years old married women having complaint of wants issue since 5 years came to the Hospital and outpatient Department of Prasutitantra and Striroga Department NIA, Jaipur. She came with a complaint of delayed menses since 2-3 years and was also trying to conceive. Above regimen was given for three months. Patient got her periods regularized, but did not conceive due to male factor.

**Case 4: Primary Infertility with delayed periods**

A 28 years old married women having complaint of wants issue came to the Hospital and outpatient Department of Prasutitantra and Striroga Department NIA, Jaipur. She came with a complaint of wants issue with delayed periods. Above regimen was given for three months. Patient got her period regularized but not conceived.

**RESULTS**

Among the four patients, 2 patients got conceived, 1 patient got her period regularized but did not conceive due to male factor. The fourth patient with primary infertility with delayed period got her period regularized.

**DISCUSSION**

Out of total four patients of active reproductive age, two patients got conceived (about 50%) results in achieving conception and in two patients delayed periods got regularized, showing that the drug is promising in setting right the rhythm of the menstrual cycle. This effect was also seen even in case of polycystic ovarian syndrome also. In cases of Infertility the treatment plan usually has done keeping in view supporting proliferative phase including ovulation and luteal phase to support implantation. This preliminary trial was done with two main popular folk-lore drugs *Jatiphala* and *Ashvattha*. *Jatiphala* was given to support endometrial proliferation and induction of ovulation and *Ashvattha* to enhance receptivity capacity of secretory endometrium.

**Probable Mode of Action of Drugs Used**

***Jatiphala* (Botanical name: *Myristica fragrans*)-** In *Sushruta samhita Sutrasthana*, *Annapana vidhi adhyaya*, *Jatiphala* is described to use along with *Pugaphala*, *Kankola*, *Karpura* and *Tambula patra* to pacify the *Kapha* that gets aggravated due to intake of meal. It is classified under *Sugandhi Triphala* in *Dhanvantari Nighantu*<sup>[2]</sup>. Fruit of *Myristica* has got *Tikta*, *Katu Rasa*, *Tikshna*, *Ushna*, *Laghu Guna*, *Deepana*, *Rucya*, *Grahi*, *Shleshma*, *Anilapaha* Properties, and indicated in *Kasa*, *Swasa*, *Vamana*, *Pinasa*, *Hrudruja* (*Bhavaprakasha Nighantu*)<sup>[3]</sup>. *Vrishya* (aphrodisiac) property is mentioned in *Dhanvantari nighantu*<sup>[4]</sup>. *Jatiphala* (nutmeg) is value added kitchen spice, used traditionally in India as a household remedy in different ailments like diarrhoea, vomiting, flatulence etc. It is a rich source of essential oils, triterpenes and various phenolic compounds and its kernel and mace are found to have lignans and neolignans abundantly. The major constituents of kernel and seed found are sabinene, alpha-pinene, beta-pinene, and D-limonene as reported by Kaliyaperumal Ashokkumar<sup>[5]</sup>. It is containing minerals like calcium, magnesium, potassium, phosphorus, vitamins riboflavin, thiamine, niacin etc<sup>[6]</sup>. Pharmacologically the drug is found to have antioxidant, antimicrobial, aphrodisiac, hepatoprotective, antimicrobial, anti-diabetic, anti-oxidant, anti-cancer etc<sup>[7]</sup> properties and has got some effects on central nervous system also. In the present study the drug *Jatiphala* (nutmeg) is given to induce the ovulation and clinically also its results are document in the above mentioned cases. In the *Nirman* of *Artava* (folliculogenesis and regeneration of endometrium) drugs which are having *Agneya guna* (first quality) are suggested to use. *Jatiphala* is having *Ushna*, *Tikshna guna* and hence it helps in metabolism related to proliferation of endometrium and follicular development and oocyte maturation. In delayed cycles usually anovulation is the feature seen probably due to prolonged *Upachaya* (proliferative) action of *Kapha*. This action of *Kapha* is limited by the *Kapha* pacifying action of *Jatiphala* and consequently it is helping in ovulation induction also. So even in patients of polycystic ovarian syndrome cycle got regularized. It is used traditionally in various Gynaecological diseases worldwide. In tanane province of Southwest Morocco, native people use nutmeg seed's *Churna* in genital tract disorders<sup>[8]</sup>. Nutmeg is found to activate peroxisome proliferator receptor, which is involved in improving the insulin sensitivity<sup>[9]</sup>, so probably another mode of action that helps in bringing down the insulin resistance in cases of polycystic ovarian syndrome. Nutmeg also found to have anti-stress activity as reported by Dhingra et al., on mice models. Since stress

is one of the established factors in primary infertility, *Jatiphala* use can bring down the stress.

#### **Rasapanchaka of *Jatiphala* (*Myristica fragrans*) as per Ayurveda**

Sanskrit/English	Sanskrit/English
<i>Veerya</i> /Potency	<i>Ushna</i> /Hot
<i>Vipaka</i> /Metabolic property	<i>Katu</i> /pungent
<i>Guna</i> /Physical property	<i>Laghu</i> /light, <i>Teekshna</i> /Sharp
<i>Rasa</i> /taste	<i>Tikta</i> /Bitter, <i>Katu</i> /Pungent

It can be observed from the *Rasapanchaka*, that it is having *Ushna* potency. So, it can be predicted that by virtue of its *Ushna veerya*, it might be inducing the ovulation by maintaining adequacy of metabolic activities of *Pitta*, which is an important thing to stimulate the graffian follicle to release the ovum. Thereby it is probably causing the Luetinizing hormone surge to occur ovulation.

***Ashvattha Jata* (*Ficus religiosa*):** It is a well described *Prajasthapana* and *Punsavanakara* drug in *Samhitas* as well in *Nighantus*. The bark of *Ashvattha* is found to have astringent, anti-bacterial, anti-protozoal, anti-viral, anti-diarrhoeal actions and traditionally used in the treatment of *Upadamsha* (gonorrhoea), *Vrana* (ulcers), and *Tvakroga* (skin diseases). The leaves reported anti-venom activity and regulates the menstrual cycle<sup>[10]</sup>.

#### **Rasapanchaka of *Ashvattha* (*Ficus religiosa*) as per Ayurveda<sup>[11]</sup>**

Sanskrit/English	Sanskrit/English
<i>Veerya</i> /Potency	<i>Sheeta</i> /Hot
<i>Vipaka</i> /Metabolic property	<i>Katu</i> /pungent
<i>Guna</i> /Physical property	<i>Guru</i> /heavy, <i>Ruksha</i> /rough
<i>Rasa</i> /taste	<i>Kashya</i> /Astringent

In Ayurveda it is said as *Varnya* (complexion enhancer), pacifies *Kapha*, *Pitta*, *Sangrahi*, *Yonidosahara*<sup>[12]</sup>, *Rakta daha shaman*, *Bhagnasandhanakara*, *Mutrasangraheeya*. Root bark of *Ashvattha* contains active principles like  $\beta$ -sitosteryl-D-glucoside and it has shown hypoglycemic effect when administered orally in alloxan induced diabetic rabbits and in pituitary-diabetic rats as well<sup>[13]</sup>. Administration of bark extract found to stimulate cellular and humoral antibody response and has got promising immunostimulant properties<sup>[14]</sup>.

#### **CONCLUSION**

In the present report clinical observations of four primary as well as secondary infertility cases treated with *Jatiphala churna* (for ovulation induction), along with aerial roots of *Ashvatta* (to support secretary) are reported. According to results clinically observed, these two drugs *Jatiphala* and *Ashvattha Jata* has tremendous effect on female infertility and as well as in regularizing the menstrual cycle in a very short time. Hence, it can be concluded that this regimen appears promising combination in treating sub-ovulation and consequent inadequate luteal phase and based on this study a complete clinical trial can be taken.

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