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A pilot study on the management of *Nashtartava* w.s.r. to Anovulation with *Swarnaksheeri*

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ABSTRACT

Today, Infertility has become a global health problem. It affects approximately 8-10% of couples in reproductive age group. It is a multidimensional problem and affects social, economic and cultural status of couple in society. Non-ovulation is due to endocrine disorders, polycystic ovarian disease (PCOD), and corpus luteal phase defects, Thyroid dysfunctions, Hyperprolactinemia etc. 10 patients of diagnosed anovulation were selected randomly from OPD of S.J.G.A.M.C. & Hospital, Koppal. 40ml of *Swarnakshiri Swarasa* given orally in the morning empty stomach on the 4th day of menstrual cycles. Assessment parameters like Endometrial thickness, Follicle growth recorded and analysed statistically. Owing to its *Ushna*, *Teekshna* and *Garbhashayabalya* properties *Swarnakshiri Swarasa* has shown encouraging results with ovulation and two patients conceived.

Key words: Menarche, Anovulation, Infertility, *Swarnakshiri*.

INTRODUCTION

Procreation is a blessing that aids in transferring the genes from one generation to another and thus aid to evolution. Fertility is the capacity of a couple to reproduce or the state of being fertile. Infertility can be defined as the failure to achieve pregnancy within one year of regular unprotected intercourse in absence of known reproductive pathology.^[1] Infertility affects about 10-15% of reproductive age couples. Anovulation is a common problem encountered in infertility.^[2] Anovulation^[3] occurs in about 10% cases of female Infertility, and sporadically during the child bearing years, but its occurrence is not uncommon for a few cycles after the menarche and just prior to the

onset of menopause. The term *Vandhyatva* (female infertility) is considered as one of the *Vatik* disorders among 80 types of *Vatavyadhi* in *Ayurvedic* texts. *Swarnakshiri Swarasa*, a folklore medicine used for failure to conceive is supposed to be one of the effective therapies in this field. A clinical study on 12 selected patients of female infertility having anovulatory factor, being diagnosed by Ultrasonography (USG of 2 consecutive cycles) were given the treatment. These patients were given 40ml of *Swarnakshiri Swarasa* for two consecutive cycles after 1st day of cessation of bleeding.

Description of *Vandhyatva* is available in most of the *Ayurvedic* classics, including *Nidana* (diagnosis), *Samprapti* (Etiopathogenesis), *Lakshana* (symptomatology), *Bheda* (types) and *Chikitsa* (treatment).

In this study, efforts have been made to study the effect of *Swarnakshiri Swarasa* in Anovulation. Ovulation is under the control of *Vata*. This folklore medicine is attributed for its effect in *Vandhyatva*.

Ovarian factor contribute 15-25% and is the second common cause of infertility.^[4] Ovulatory factor is an important subset in infertility among women, accounting about 40% cases.^[5] Over the past few

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decades, modern medical field developed modalities like hormonal therapy, in-vitro fertilization, embryo transfer, gamete intra-fallopian transfer etc., but with minimal success rate. Additionally, these procedures are associated with adverse effects and are not affordable to all. Considering these inconveniences, the population is turning towards traditional modalities like Ayurveda.

MATERIALS AND METHODS

12 patients of diagnosed anovulation were selected randomly from O.P.D and I.P.D of S.J.G. Ayurveda Medical College & Hospital of Stree Roga and Prasooti Tantra Department, Koppal. 40 ml. of *Swarnakshiri Swarasa* given orally in the morning with empty stomach on the 4th day of menstrual cycle in Stat dose.

Selection of Drug

Drug source

The fresh raw drug was collected from local area under the supervision of Dravya Guna specialists. *Swarasa* was prepared in S.J.G.A.M.C. & H. Pharmacy, Koppal.

Standard of preparation (S.O.P)

Fresh *Swarnakshiri* plants were collected from Herbal Garden of S.J.G.A.M.C & H. Koppal under the guidance of Dravya Guna specialist. Here whole plant parts were taken for the study. Plants were washed with water. Then wiped nicely. The plants were weighed. 300gms of fresh drug was taken for the study. After proper wiping fresh raw drugs were cut into small pieces. All small pieces were subjected to grinder. *Kalka* is formed. *Kalka* thus obtained is squeezed through white clean cotton cloth. Approximately 100ml of *Swarasa* was obtained. Of which 40ml of *Swarasa* was given to each patient in stat dose.

Posology

Dose and route of administration

40ml per cycle orally on empty stomach on 1st day after cessation of bleeding.

Duration of treatment : 2 consecutive cycles.

Inclusion Criteria

- Primary and secondary infertility with anovulatory factors.
- Age group 20-40 years.
- Patients with or without PCOS.
- End point of the study- after rupture of matured graffian follicle.

Exclusion Criteria

- Disorders of reproductive tract such as tuberculosis, carcinoma, and congenital deformities of reproductive tract.
- Patients suffering from the other chronic illness, cardiac diseases, and thyroid disorders etc.
- Infertility associated with other factors like tubal blockage, uterine factors etc.

Investigations: Follicular scan

Criteria for Diagnosis: 1. Follicular growth, 2. Endometrial thickness

OBSERVATIONS

Total 12 patients were registered in the present study; out of them 10 completed the treatment and 2 was dropped out because of LAMA (Left against medical advice).

Table 1: Total number of patients who completed the treatment.

SN	Total no. of patients	Patients completed the treatment	LAMA
1.	12	10	2

Distribution of Patients

In this study, 84%% patients had primary infertility and 16% patients had secondary infertility. All belonged to age group of 20-40 years; 20% patients had 6-10 years chronicity and 10% had taken hormonal treatment for infertility.

Total 50% of patients were having hirsutism. Obesity was found in 60 patients with Body Mass Index (BMI) of 25-29 while *Swetapradara* (white discharge) was

found in 50% of the patients and breast secretion was present only in one patient. It shows that maximum have anovulation.

Maximum number of patients (90%) had irregular menses. Nearly 70% patients had moderate quantity of menses. 30% patients had painless menses. 70% patients had 4-6 days duration of menstrual period. 20% had inter-menstrual period of 20-25 days while 10% had an interval of 36-48 days followed by 30% with more than 50 days.

Table 2: Distribution of Patients taken for study.

SN	Characters	Percentage
1.	Primary Infertility	84%
2.	Age 25-30 yrs.	50%
3.	Chronicity (more than 2 yrs)	60%
4.	Hirsutism	50%
5.	Obesity	60%
6.	Irregular Cycles	90%

Causes of Anovulation

Chinta (worry) was present in all registered patients while *Tanava* (stress) was found in 70% followed by *Bhaya* (fear) in 10%, *Krodha* (anger) in 10%, *Dainya* and *Shoka* in 10%. It shows that stress was present in all the patients, which is one of the causes of anovulation. 50% reports of semen analysis showed certain abnormalities that may influence overall effect of the therapy.

Table 3: Various causes of Anovulation

SN	Causes of Anovulation	Percentage (%)
1.	<i>Chinta</i> (worry)	All %
2.	<i>Tanava</i> (stress)	%
3.	<i>Bhaya</i> (fear)	%
4.	<i>Krodha</i> (anger)	%
5.	<i>Dainya</i> & <i>Shoka</i>	%

RESULTS

Table 4: Effect of Swarnakshiri Swarasa on follicular growth and ovulation in Patients after Treatment- 1

S N	OPD no.	Nam e	Ag e	Endom etrial thickne ss	Dominant Follicle (mm)			
					D ₁₁	D ₁₃	D ₁₅	D ₁₆
1.	35203	KKSS K	28	8.6mm	18	20	rupt ured	-
2.	32488	KKSC M	26	7.2mm	14	16	20	Ru ptu red
3.	32782	KKSR J	22	7.9mm	9	12	16	17
4.	34504	KKSS K	24	8.5mm	8	24	24	Ru ptu red
5.	35410	KKSR LA	28	8.1mm	6	18	20	Ru ptu red
6.	34499	KKSK P	29	8.3mm	17	18	18	-
7.	32470	KKSL H	22	7.9mm	14	7	18	20
8.	33320	KKSS C	32	6.8mm	9	20	22	Ru ptu red
9.	34210	KKSN MB	23	7.6mm	8	24	24	Ru ptu red
10.	33410	KKSA P	34	6.9mm	7	18	20	Ru ptu red
11.	33121	KKSJ NM	21	8.4mm	17	18	18	19
12.	35319	KKS MW	27	7.8mm	9	9	11	13

Table 5: Effect of Swarnakshiri Swarasa on follicular growth and ovulation in patients after treatment- 2

SN	OPD no.	Name	Age	Endometrial thickness	Dominant Follicle (mm)			
					D ₁₁	D ₁₃	D ₁₅	D ₁₆
1.	35203	KKSK	28	8.6mm	18	20	ruptured	-
2.	32488	KKSCM	26	7.2mm	14	16	20	ruptured
3.	32782	KKSRJ	22	7.9mm	9	12	16	17
4.	34504	KKSK	24	8.5mm	8	24	24	ruptured
5.	35410	KKSLA	28	8.1mm	6	18	20	ruptured
6.	34499	KKSKP	29	8.3mm	17	18	18	-
7.	32470	KKSLH	22	7.9mm	14	7	18	20
8.	33320	KKSC	32	6.8mm	9	20	22	ruptured
9.	34210	KKSNMB	23	7.6mm	8	24	24	ruptured
10.	33410	KKAP	34	6.9mm	7	18	20	ruptured
11.	33121	KKJNM	21	8.4mm	17	18	18	19
12.	35319	KKMW	27	7.8mm	9	9	11	13

Table 6: Effect of Swarnakshiri Swarasa on follicular growth and ovulation patient after treatment- 2

SN	OPD no.	Name	Age	Endometrial thickness	Dominant Follicle (mm)			
					D ₁₁	D ₁₃	D ₁₅	D ₁₆
1.	35203	KKSSK	28	9.4mm	14	18	22	ruptured
2.	32488	KKSCM	26	8.8mm	17	21	ruptured	
3.	32782	KKSRJ	22	9.2mm	8	24	ruptured	
4.	34504	KKSSK	24	9.6mm	15.6	18	ruptured	
5.	35410	KKSLA	28	9mm	17	18	18	18
6.	34499	KKSKP	29	8.6mm	14	15	15	15
7.	32470	KKSLH	22	LAMA				
8.	33320	KKSPV	32	9.6mm	8	24	ruptured	
9.	34210	KKSNMB	23	8mm	11	13	13	13
10.	33410	KKSUM	26	5.4mm	11	11	12	12
11.	33121	KKJNM	21	9.3mm	20	21	ruptured	
12.	35319	KKMW	27	LAMA				

After treatment three patients failed to ovulate, 5 patients ovulated on D15 and remaining 2 patients

ovulated on D₁₆. Two patients conceived after treatment with the assistance of IUI.

DISCUSSION

Swarnaksheeri Swarasa was given in stat dose shown wonderful results in inducing ovulation, although it is a folklore medicine, we will get many references about its action on reproductive system in *Nighantus*. *Garbhashaya Shothahara* and *Garbhashaya Shodhaka* are the two principles which may be the possible actions helped in ovulation.

Probable mode of action of Action

This drug has properties like, *Rasa - Tikta, Katu; Guna - Laghu, Ruksha; Virya - Sheeta; Vipaka - Katu; Karma - Kapha-Pittahara, Vishaghna, Bhedana, Rechana*.

This drug stimulates hypothalamus leading to stimulation of Gonadotropin Releasing Hormone (GnRH), and neurons regularizing GnRH pulsatile secretion, leading to ovulation. Phytochemical analysis has shown presence of alkaloids like Berberine, Protopine and Cryptopine.

Berberine - It has anti-inflammatory and androgen inhibitory properties, which regulate FSH, LH ratio and ovarian steroidogenesis.

Protopine and Cryptopine are Strong Vasomotor stimulant. Both alkaloids influence Hypothalamus targeting on neurotransmitters without depressing Central Nervous System (CNS). This maintains HPO axis and induce ovulation.

CONCLUSION

Swarnaksheeri, a folklore medicine has shown good results in induction of ovulation in both PCOS (Poly Cystic Ovarian Syndrome) and non PCOS patients. Two patients with PCOS not ovulated because they may have chronic HPO disturbance. Since this study is a pilot study with small samples, may be the results got

were not standard. But if we try on larger samples, it may be a contribution in the gynaecological field. At the end of the study, it can be concluded that, by this conception rate can be increased and it may be an alternate choice for infertility management w.s.r. to Anovulatory problems.

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