

## The Role of *Prajasthapana Yoga* and *Phalaghrita Uttarbasti* in Management of Infertility W.S.R. Cervical Factor

### Research Article

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### Abstract

*Vandhyatva* (infertility) has been a long standing problem since ancient times. Many herbal and herbo-mineral formulations are mentioned as treatment of infertility in the ancient texts, but they are not categorized according to the responsible factor of infertility. It is need of the hour to evaluate the efficacy of formulations with respect to various factors. With the above aim a clinical study was conducted to evaluate the efficacy of *Prajasthapana Yoga* and *Phalaghrita Uttarbasti* on cervical factor i.e scanty cervical mucus. For clinical trial total 7 patients were selected for this study. 4 tab. (2 gm) of *Prajasthapana Yoga* was given orally thrice a day for 2 month and intracervical *Uttarbasti* of *Phalaghrita* (3 ml) was administered in every sitting for 6 days after end day of menses subsequently for two cycles. Sims Huhner and Moghissi cervical mucus Test and post coital test were selected for the diagnosis and for evaluation of efficacy of therapy on cervical factor. Statistically highly significant result were found on quantity and viscosity ( $p < 0.001$ ) and significant result were found inferring cellularity and spinnbarkeit ( $p < 0.05$ ). Hence, in nutshell it was concluded that *Prajasthapana Yoga* and *Phalaghrita Uttarbasti* showed good results in all the properties of cervical mucus.

**Keywords:** *Vandhyatva*, *Uttarbasti*, *Phalaghrita*, *Prajasthapana Yoga*, Cervical factor, Infertility.

### Introduction

In the present scenario of the rapid advancement in technology, infertility is still a problem that has continued since ages. Many factors are responsible for female infertility, which is Tubal factor -40%, ovarian factor -05%, cervical factor -20% and uterine factor -10%. J.M Sims (1868) first identified cervical factor in infertility (1). The cervical mucus acts as filter allowing only single functioning to penetrate cervical mucus. When this is hostile and unfavorable it reduces the quality or quantity of sperm, affect sperm viability and ultimately leads to infertility. *Acharya Sushruta* has described the essential factors for conception i.e *Ritu* (season or ovulatory period), *Kshetra* (field i.e reproductive organs) and *Ambu* (water i.e nutritive material & hormones) which are responsible to maintain the pregnancy and defect in either of these factors may result in to infertility (2).

Less quantity and poor quality of cervical mucus may be due to inadequate estrogen level or less utilization of estrogen through receptor is the main factor of infertility caused by cervical factor. Proper secretion of cervical mucus is a result of balanced *Tridosha* (three humors of body) *Prasada Rasa dhatu*

(essence plasma or nutrients), *Raktadhatu* (blood), *Mamsadhatu* (muscles, tissues) and *Sthanika Agni* (local metabolism at cellular level) according to *Ayurveda*. Functions of cervical mucus can be linked with the *Kledana Karma* (moisturizing action) of *Kapha Vata* vitiated due to *Ruksha Guna* (dry Property) and *Tikshna Guna* (penetrating or pungent property) is mainly responsible for reduction in cervical mucus. Treatment of *Vandhyatva* (infertility) is broadly classified into two groups i.e *Taila* (oil) treated conditions or *Ghrita* treated conditions. The choice of *Taila* (oil) or *Ghrita* depends on the accompanying *Doshas* with *Vata*. If *Vata* is associated with *Kapha*, *Taila* has to be preferred, while in case of *Pitta* association, *Ghrita* has to be preferred (3). Considering this concept *Phalaghrita* and *Prajasthapana Yoga* were selected for the present trial. As per classics the drugs mentioned in *Prajasthapana Yoga* have *Prajasthapana* effect. All herbs are *Rasayana* and *Balya*. Thereby the formulation of *Prajasthapana Yoga* found very effective in *Vandhyatva*. *Uttarbasti* is one type of *Basti* which is best for the disease of female. It tones up reproductive organs and improves the quality of *Ambu* i.e cervical mucus. Thus by applying proper drug through *Uttarbasti*, disorders of female reproductive tract can be cured. Hence, this study was planned to evaluate the efficacy of *Phalaghrita Uttarbasti* and *Prajasthapana Yoga* on cervical factor responsible for infertility.

### Materials and Methods

#### Selection of Patients

Patients (n=7) suffering from infertility due to cervical factor were registered from O.P.D of *Prasuti-*

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*Streeroga* (Gyneac), Department IPGT& RA, Jamnagar, irrespective of cast, religion etc. Informed written consent was taken all the patients. The study was approved by the Institutional ethics Committee.

**Criteria for Diagnosis**

Based on Moghissi mucus scale (Cervical mucus test) & Post Coital Test (PCT): for diagnosis of Cervical Factor(5).

**Criteria for selection of Patients**

Primary and Secondary both types of infertile patients have been selected for study. Patients having poor cervical mucus, (functional abnormality of Cx mucus) and abnormal PCT were selected for present study.

**Exclusion criteria**

The patients who had the problems such as anovulatory, structural abnormalities of cervix and blockage of both tubes were excluded.

**INVESTIGATIONS:**

Endometrial Biopsy & Hysterosalpingography, investigations were carried out to rule out ovarian and tubal factor of infertility. Routine hematological and urine investigations were carried out to rule out underlying other pathologies.

**CRITERIA FOR ASSESSMENT:**

The criteria for assessment of treatment are based on Sims Huhner and Moghissi's score for cervical mucus and Post coital test.

The cervical mucus score is as follows:

**Amount**

- < 0.1 ml = 0
- = 0.1 ml = 1
- = 0.2 ml = 2
- >0.3 ml = 3

**Viscosity**

- Thick, highly viscous = 0
- Intermediate type = 1
- Mildly viscous = 2
- Thin = 3

**Ferning**

- No crystallization = 0
- Atypical fern formation = 1
- Primary / Secondary = 2
- Tertiary = 3

**Spinnbarkeit**

- < 1 cm. = 0
- 1 to 4 cm. = 1
- 5 to 8 cm. = 2
- >9 cm. = 3

**Cellularity**

- >11 cells / hpf. = 0
- 6 to 10 cells /hpf. = 1
- 1 to 5 cells /hpf. = 2
- 0 cells /hpf. = 3

**Density of sperm**

- Dead / No sperm /hpf. = 0

- 2 to 5 sperm / hpf. = 1
- 5 to 10 sperm / hpf. = 2
- >10 to 15 sperm /hpf. = 3

**Motility of sperm**

- Immotile = 0
- In situ motile = 1
- Sluggishly = 2
- Rapid = 3

**Criteria for assessment of overall effect of therapy**  
**Table No.1 Showing the total effect of therapy on the basis of percentage relief**

Cured	100% result, increase in cervical mucus score >10 & conception
Markedly Improved	75% result, increase in cervical mucus score > 10.
Moderately Improved	50% result, increase in cervical mucus score < 5
Improved	25% result, increase in cervical mucus score > 5.
Unchanged	0 % result, No change in the cervical mucus score after treatment.

**TREATMENT PROTOCOL**

**Selection of Drugs:**

*Phalaghrita* and *Prajasthapana Yoga* have been selected for drug trial. *Phalaghrita* (4) was prepared in Department of *Rasa Shastra* and *Bhaishajya Kalpana*, I.P.G.T. & R.A., Jamnagar. *Prajasthapana Yoga* (Anubhuta) was prepared in the pharmacy of Gujarat Ayurved University, Jamnagar.

**Table No.2 Showing the ingredients of *Prajasthapana Yoga***

Sr. No.	Ingredients	Part
1	Shatavari	1
2.	Atibala	1
3.	Amalaki	1
4.	Nagakesara	1
5.	Vatankura	2
6.	Durvasvarasa (Bhavadravya)	Q.S.

**DRUGS & POSOLOGY**

After proper diagnosis, all patients were given *Prajasthapana Yoga* in below mentioned posology followed by *Uttarbasti* of 3 ml *Phalaghrita* for 6 days after completion of menses in a month.

- **Dose:** 4 tab (2gm) thrice a day orally
- **Anupana:** warm milk
- **Duration of Treatment:** 2 months

**FOLLOW –UP STUDY:**

2 month follow –up for pregnancy or any late complications carried out after the completion of treatment. Any new complaint appeared during follow up period related to study was also noted.

**Observations**

Total 7 patients were registered.06 patients had completed full course and remaining 01 patient left the course incomplete.Maximum number of patients i.e. 28.57% were registered of the age between 21-23 yrs.,27-29 yrs, and 30-32 yrs each age group . The distribution of the patients according the duration of their chief complaint shows that a majority of patient i.e. 42.86% had the complaint since 1-3 years, 28.57% of patients had the complaint since 4-6 years and 28.57 % patients had the complaint since 7-9 years.

Distribution of patients according to their associated complaint show that maximum number of patients i.e 57.14% had no complaint 28.57% of patients had painful menstruation while 14.29% of patients had scanty menstruation.

All the patients had regular menstrual cycle. Nearly 71.43% patients had moderate quantity of menses..All the patients showed absence of white discharge and cervical erosion.The 71.53% of patients

were *Pitta-Kapha Prakriti*. 85.71% of patients had *katu Rasa* dominance in their diet.

**Results**

**Statistical test**

Based on observations, the data obtained were statistically analyzed in terms of mean,standard deviation, standard error and unpaired ‘t’ test was considered at the level of  $p < 0.001$  as highly significant , $p < 0.05$  or  $p < 0.01$  as significant and  $p > 0.05$  as insignificant to assess the result.

**Effect on cervical mucus:**

The effect of therapy on cervical mucus was found in all the patients. Analysis of the data related to improvement in highly significant ( $P < 0.001$ ) relief in amount (66.67%)of mucous, viscosity(77.78%) ofmucous.Statically significant result ( $P < 0.05$ ) was obtained on ferning,(40%)Spinnbarkeit (41.18%),Cellularity (28.57%) i.e. shown in Table-3.

**Table no -3 Effect of Phalaghrita cervical Uttarbasti and Prajasthapana Yoga on cervical mucous**

Cervical properties	Mean score		Relief%	S.D	S.E	t	P
	B.T	A.T					
Amount	0.83	2.50	66.67	0.52	0.21	7.91	<0.001
Viscosity	0.67	3.00	77.78	0.82	0.33	7.00	<0.001
Ferning	1.50	2.50	40	0.63	0.26	3.87	<0.05
Spinbarkeit	1.67	2.83	41.18	0.75	0.31	3.80	<0.05
Cellularity	1.67	2.33	28.57	0.52	0.52	3.16	<0.05

The data pertaining to the effect on PCT revealed statistically insignificant result ( $P > 0.1$ ) on density of sperm (70%).On motility of sperm (100%),statistically insignificant result ( $P < 0.1$ )was observed due to small size of data.i.e. shown in Table-4.

**Table no - 4 Effect of Phalaghrita cervical Uttarbasti and Prajasthapana Yoga on Sperm Density and Motility**

Factor of cervical mucus	Mean score		Relief (%)	S.D.	S.E.	t	‘P’
	B.T	A.T					
Density of sperm	0.50	1.67	70	0.98	0.40	0.40	>0.1
Motility of sperm	00	1.00	100	1.10	0.45	2.24	<0.1

33.33% of patients conceived (cured), 50 % of patients were markedly improved,16.67 % of patients were moderately improved. None of the patients remained unchanged out of the 6 patients i.e. shown in Table-4.

**Table No - 5 Total effect of therapy**

Effect of therapy	No. of patients	Percentage
Completely cured	2	33.33
Markedly improved	3	50
Moderately improved	1	16.67
Improved	0	00
Unchanged	0	00

## Discussion

### Prajasthapana yoga

*Prajasthapana Yoga* contains mainly *Madhura, Tikta* and *Kashaya Rasa, Laghu, Ruksha Guna*, both *Madhura Vipaka* and also *Shita Virya*. It also has *Dipana, Anulomana, Shothahara, Rasayana, Garbhasthapana* properties. It also has anti-bacterial, anti-fungal, antioxidant, anti-inflammatory, anti-abortion and immunomodulatory. (6),(7),(8)

### Phalaghrita

As already described that *Ghrita* has *Tridoshaghna karma* due to its properties(9) and milk is also *Vata Pitta shamaka, Jivaniya* and *Rasayana*. So, *Phalaghrita* has the properties of *ghrita*, milk and other ingredients it contains. *Phalaghrita* contains mainly *Tikta, Madhura* and *Katu Rasa. Laghu, Snigdha Guna*, both *Katu* and *Madhura Vipaka* and also *Ushna* and *Sheeta Virya*. It also has *Dipana, Pachana, Anulomana, Shothahara, Krimighna* and *Prajasthapana* properties. As describe previously, about the action of *uttarbasti phalaghrita* *uttarbasti* nourishes and regenerates the epithelial cells.

### Action of drug on cervical factor:

Action of *Prajasthapana yoga* and *Phalaghrita* on each characteristic of cervical mucus are as follows:

#### Amount

Anabolic action of drug increases more secretory units and proper estrogenic effect on cervical epithelium, due to proper function of receptor mechanism thus the cervical mucus increases in amount.

#### Viscosity and Spinnbarkeit

It decreases *picchilata of kapha* and increases thinness (fluidity) of mucus due to *laghuguna*, the viscosity decrease and hence spinnbarkeit increases.

#### Cellularity

It decreases the debris by anabolic properties, thus the mucus becomes clear.

#### Fern

*Dipana, Anulomana* and *Pachana karma* does the proper Oestrogenic effect on cervical mucus and results in proper ferning.

#### pH

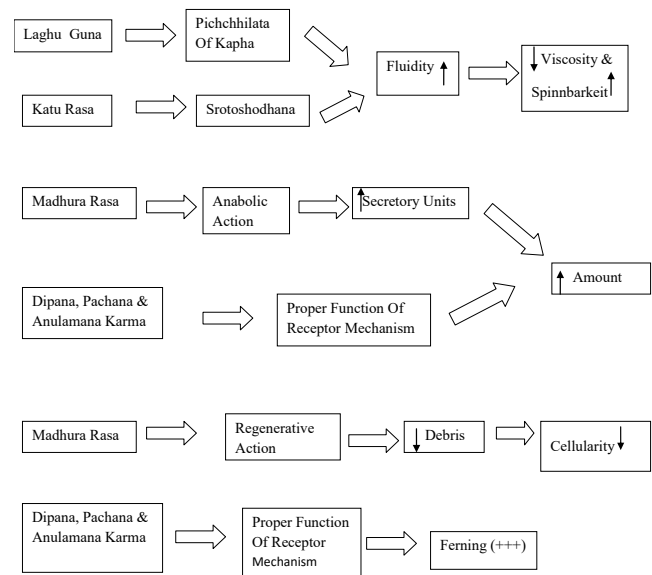
*Shita* and *snighagunas* inhibit the *Ushna* and *Tikshnagunas* of *Pitta* and decrease acidic mucus.

As per the result, it can be said that increase in amount of cervical mucus and viscosity, ferning, spinnbarkeit, Decrease in cellularity was observed due to anabolic effect of *Shatavari*. Increased amount of cervical mucus was observed due to its local regenerative effect on secretory unit of the cervix. The anabolic effect of *Phalaghrita* and *Prajasthapana Yoga* was observed on patients of infertility, which was reported with increment of cervical mucus along with enhanced Agni.

It was also observed that the patients suffering from scanty menses before the treatment, they got a

normal period. It may be due to *Vatapitta Shamaka* property of drugs and phytoestrogenic or estrogen properties of *Prajasthapana Yoga (Shatavari)*. This drug after metabolism enters in to blood, in hypothalamus estradiol is converted in to catacholestrogen 2hydroxylase enzymes. Catecholestrogen may influence GnRH release regulate hypothalamus pituitary ovarian axis and regulate Reproductive function.(9).

### Image no. 1 Shown the Diagram of drug action



## Conclusion

From the above discussion, it can be concluded that though the percentage of cervical factor(20 %) in *Vandhyatva (Infertility)* is less than other factors, but it is as important causative factor due to its adverse effect on sperm penetration. So, for healthy mucus patient should be taken *Balya, Brumhana* and *Madhuraahara* and avoid *Ushna, Tikshnaahara*. They should be remained free from *Krodha, Chinta, Shoka* etc. which have great role to create, abnormalities in almost all causative factors of *Vandhyatva*. Lastly The results of study reveal that the *Prajasthapana Yoga* with *Phalaghrita Uttarbasti* was very effective therapy on the cervical factor. Also it can conclude that combine therapy had good anabolic effect on the whole body as well as uterus, the effect of *Prajasthapana Yoga* and *Phalaghrita* both drugs have good effect to increase the status of cervical mucus. Hence, *Prajasthapana Yoga* with *Phalaghrita Uttarbasti* is recommended for the patient of infertility due to cervical factors.

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