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CASE STUDY

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### SUBFERTILITY IN POLYCYSTIC OVARIAN SYNDROME AND ROLE OF AYURVEDA: A CASE REPORT

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#### ABSTRACT:

**Background:** PCOS is the most common endocrine disorder of reproductive age group women, with a prevalence rate of 15% and 40% of subfertility and infertility respectively. Subfertility is more inclined due to obesity, ovulatory defects, quality of oocytes, and endometrial receptivity. Even when ovulation is restored, there is altered cellular endometrium affecting the endometrial receptivity at the time of implantation which is likely to be associated with subfertility and increased miscarriage rates. Women with PCOS have defective expression of uterine receptivity markers. Ayurvedic description of *Asrik* and *Ashava dushti* as causative factor of altered fertility correlates with the PCOS related fertility issues. Some previous researches have established that endometrial inflammatory response and scratching can improve uterine receptivity. So, it was planned to see the effect of *Uttarabasti* (intrauterine instillation of drug) on the endometrial receptivity in a case of PCOS. **Objective-**To evaluate the efficacy of *Uttarabasti* to improve endometrial receptivity in a sub fertile PCOS patient. **Material and methods-** A diagnosed PCOS women, aged 28 years desiring conception since 1year of active married life was selected and given bio purification followed by *Phalaghrita Uttarabasti* (3-5 ml) after stoppage of menses for 5 days consecutively for 2 cycles. Uterine Bio Physical profile with Applebaum's score was done on day 22<sup>nd</sup> after procedure during each menstrual cycle and assessed for the changes. **Result-** *Uttarabasti* enhances Uterine scoring system of reproduction in the patient from score 10 to score 18 which is associated with increased chances of conception by improved endometrial receptivity. **Conclusion-**Intrauterine instillation of drug may improve endometrial receptivity in patients of PCOS. This modulation can be better understood by the use of other markers of receptivity in future research to establish such clinical efficacy.

**Key words:** Subfertility, Endometrial receptivity, Uterine biophysical profile, PCOS

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## INTRODUCTION

Polycystic ovary syndrome (PCOS) is an endocrine disease with the involvement of other systematic dysfunctions. Its prevalence rate is 15% and infertility found in approximately 40% of women with PCOS <sup>(1)</sup>. Altered endometrial function and ovulation defects both are important causes of PCOS associated infertility. However, change in endometrium has not get the same attention as ovulatory disorders <sup>(2)</sup>. It is observed that after restoration of ovulation pharmacologically conception rate is not as expected which may be caused due to altered endometrial receptivity <sup>(3)</sup>. It can be assumed that endometrial function also be responsible for PCOS-related infertility <sup>(4)</sup>. The present study is framed mainly for disorders of endometrial receptivity in patients with PCOS. Diagnosis of PCOS is based on anovulation, elevated androgen levels and presence of multiple ovarian cysts on ultrasound findings. A direct description of Polycystic ovarian syndrome in Ayurvedic classical texts is not available. In Ayurveda *asrik* and *ashaya dushti* considered for delayed fertility of infertility <sup>(5)</sup>. Both type of these mentioned *dushti* can be considered under the umbrella of PCOS related pathogenesis of subfertility After considering clinical features and *dosha* involvement, management principles of *Artava vyapad* were

adopted. *Uttarabasti* comes under the *Sthanika chikitsa* <sup>(6)</sup>, in general it is the procedure in which the medicine is administered through the urethral route or vaginal route. Or it can be defined as the administration of drug through above *gudamarga* <sup>(7)</sup>. Based on drug quality it is classified as *niruha* (cleansing enema made of herbal decoctions) and *sneha basti* (enema made of medicated oils). Based on the previous work, it is established that inflammation and scraping can improve the endometrial receptivity <sup>(8)</sup>, it was planned to give *Sneha Uttarabasti* in present patient who was came with the main complain of unable to conceive.

### 1. Case Report:

Married female patient, aged 28 years, a home maker, presented at OPD of Prasuti Tantra, Faculty of Ayurveda complaining of inability to conceive even after 1 years of regular unprotected sexual life. The seminal parameters of husband were found to be within normal limits. The patient had menstrual irregularities since past 9yrs. The menstrual history of the patient showed 6 days duration with an interval of 4-6 months between the two cycles. She underwent 5 years of hormonal treatment for irregular cycle which she left 3 years back. Rapid weight gain

observed during this time period. At her third

OP visit her LMP was 22.12.2021.

### Clinical findings:

**Table 1: Showing clinical examination and findings of patient**

Examination		Findings
Built		Obese
Nourishment		Moderate
Pulse		62 b/min
Blood pressure		130/70 mmHg
Temperature		Afebrile
Respiratory rate		16/min
BMI		32.5
Pallor, icterus, cyanosis, clubbing, lymphadenopathy		Absent
CNS		Well oriented to person, place, time
CVS		S1, S2 normal, No murmur
Respiratory system		Bilateral chest clear, no added sound
Eight fold examination (Ashtavidha pareeksha)	Nadi	Pitta-kaphaj
	Mutra	Prakruta
	Mala	Prakruta
	Jihva	Prakruta
	Shabda	Prakruta
	Sparsa	Samshitoshna
	Drik	Prakruta
	Akriti	Sthoola
Ten fold examination (Dashavidha pareeksha)	Prakruti	Vata pittaja
	Vikrati	Prakriti sam samveta
	Sara	Madhyam
	Samhanan	Pravara
	Satmya	Madhya
	Satva	Avara
	Ahara shakti	Avara
	Vyayam shakti	Madhyam
	Vaya	Madhyam
	Bala	Avara

## Diagnostic assessment

**Table 2: Showing criteria of diagnosis and their assessment**

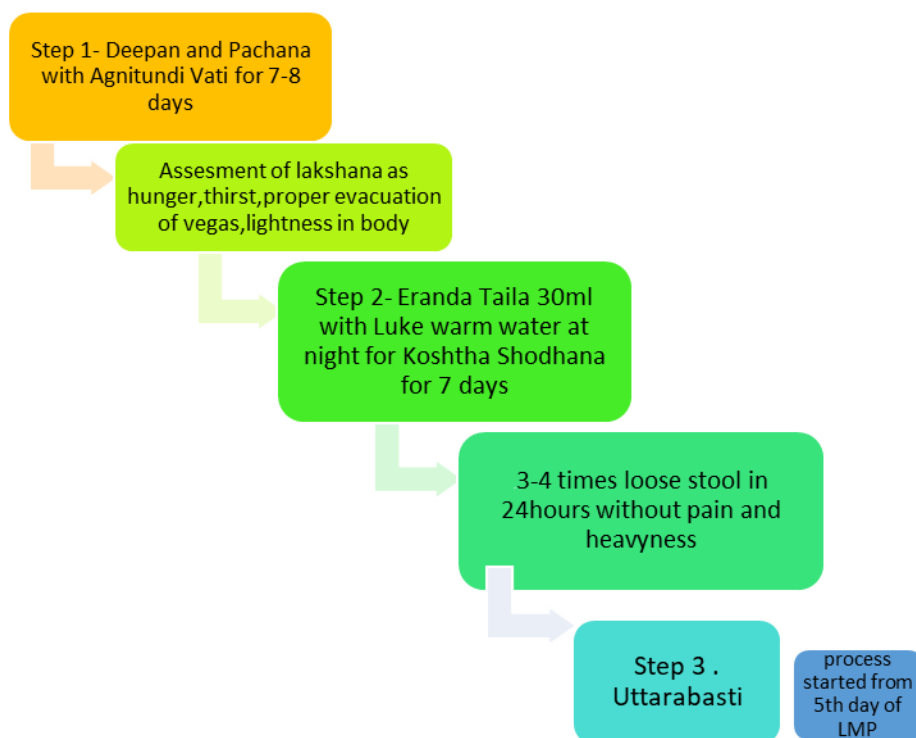
No.	Criteria	Findings	Assessment
1.	<i>Srotas pariksha</i> (assessment of microchannels of body based on questionnaire)	<i>Mandagni</i> (poor digestive fire) <i>Gaurava</i> (heaviness in body) <i>Tandra</i> (sleepiness)	<i>Rasavha srotas dushti lakshan</i>
		<i>Aruchi</i> (decreased libido) <i>Aharshan</i> (less excitement) <i>Agarbha</i> (unable to conceive)	<i>Shukravaha srotas dushti lakshana</i>
		<i>Artava nasha</i> (absence of menses) <i>Bandhyatva</i> (infertility)	<i>Artava vaha srotas dushti lakshan and avrita vata.</i>
2.	Per speculum examination	discharges mild, cervix healthy and nulliparous	Normal
3.	Per vaginal examination	Uterus size normal sized, anteverted anteflexed, all fornix clear.	Normal
4.	Ultrasound pelvis	Bilateral ovaries shows multiple small follicle of 4-6 mm with volume 20 cc and 18 cc of right and left ovaries respectively. ET 3mm (7 <sup>th</sup> day)	PCOD
5.	Follicular study (9 <sup>th</sup> day onwards)	multiple small follicles on 10-18 days (arrested follicle growth)	Anovulation With Immature Follicles
6.	Hysterosalpingo-graphy	B/L patent tubes with free peritoneal spillage of dye, Uterine contour was normal	Normal study
7.	Other Investigations	Husband semen analysis	Normal
		Complete blood count	Normal
		Blood group	B positive
		HIV, HBsAg, VDRL, HCV	Non reactive
		LFT	Normal
		TFT	Normal
		RFT	Normal
		HORMONAL ASSAY	

	SR. FSH	5.8mIU/ml
	Sr. LH	18.69mIU/ml
	Sr. Prolactin	13.42ng/ml
	Sr. estradiol	52 pg/ml

### Timelines of intervention:

**Table 3: Showing interventions and outcome**

Date of LMP	Date of intervention	Applebaum's score (A.T.) (Date/score)
10.11.2021 (On Withdrawal with Progestin)	Step 1 and step2 (15.11.2021-28.11.2021)	01.12.2021/10
22.12.2021	26.12.2021-2.01.2022	12.01.2022/14
20.01.2022	24.01.2022-31.01.2022	10.02.2022 /18
UPT done on 24.02.2022 Showed Positive result	-	-



**Fig no. 1 : Showing treatment plan**

### Methods of *Uttarabasti*.

#### Poorva karma

- *Matrabasti* with *Sudha bala taila* for 2 consecutive days given.

- *Yoni Prakshalana -done with Panchvalkala Kvatha.*
- *Snehana of lower abdomen and back done with Bala taila.*
- *Svedana on back and lower abdomen done by nadi swedan.*

#### Pradhan karma

- Autoclaved sim's speculum, Anterior vaginal wall retractor, vulsellum and IUI canula with disposable syringe arranged for procedure.
- Patient was made to lie in dorsal position on Operation theatre table.
- Part preparation was done by Panchvalkala kvatha. Cervix exposed and uterine sounding was done.
- Autoclaved lukewarm Phalaghrita loaded in 5 ml disposable syringe and its

administration was done slowly in uterine cavity by IUI cannula.

- After drug administration tampon was placed in vaginal cavity and canula was removed.

#### Pashchat karma

- Patient advised to rest in head low position for at least 45 min.
- Hot fomentation with hot water bag done over lower abdomen.
- On the day of procedure patient was advised to take light diet and rest

#### Assessment criteria:

For evaluation of the result Uterine Scoring system for reproduction was adopted<sup>(9)</sup>.

**Table 4: Showing Ultrasound parameters before and after treatment**

PARAMETER	B.T. (22 <sup>nd</sup> day of Last menstrual period)	A.T. (22 <sup>nd</sup> day of Last menstrual period)
ENDOMETRIAL THICKNESS	<7mm=0, 7-9mm=2, 10-14mm=3, >14mm=1	<7mm=0, 7-9mm=2, 10-14mm=3, >14mm=1
	2	3
ENDOMETRIAL LAYERING	None=0, hazy 5=1, distinct 5=3	None=0, hazy 5=1, distinct 5=3
	1	3
MYOMETRIAL CONTRACTIONS	<3/2 min.=0, >3/2min=3	<3/2 min.=0, >3/2min=3
	0	3

<b>MYOMETRIAL ECHOGENECITY</b>	Coarse/inhomogeneous=1 homogenous=2	Coarse/inhomogeneous=1 homogenous=2
	1	1
<b>UTERINE ARTERY DOPPLER FLOW(PI)</b>	>3.0=0, 2.5-2.9=0, 2.2-2.49= 1, <2.19=2	>3.0=0, 2.5-2.9=0, 2.2-2.49=1, <2.19=2
	2	1
<b>ENDOMETRIAL BLOOD FLOW WITHIN ZONE 3</b>	Absent=0, Present sparse=2, Present multifocally=5	Absent=0, Present sparse=2, Present multifocally=5
	2	5
<b>MYOMETRIAL BLOOD FLOW (GRAY SCALE)</b>	Absent=0, Present=2	Absent=0, Present=2
	2	2
<b>TOTAL SCORE</b>	<b>10(B.T.)</b>	<b>18(A.T.)</b>

## DISCUSSION:

Polycystic ovarian syndrome is functional disorder of unclear aetiology and it is a diagnosis of exclusion with other androgen and ovulatory disorders. “Endometrial receptivity” is the ability of endometrium to accept the implantation of embryo. Endometrium receptivity is present for a specific time in one menstrual cycle, typically it is present from 22<sup>nd</sup> to 24<sup>th</sup> days of the cycle in the mid-secretory phase <sup>(10)</sup>. This is called “windows of implantation (WOI)”. Endometrial receptivity mainly depends on the hormone oestrogen

and progesterone <sup>(11)</sup>. According to Ayurveda, PCOS may be considered under *Agni* related *vikara* (disease condition due to vitiation of metabolism) with *bahu dosha avastha* (vitiating *dosha*). It is *kapha-vataja* disorder which later on also hampers the proper functioning of *pitta dosha*. Due to increased *kapha* and *agnimandya* (deficient metabolism), multiple new follicles are produced but not able to get matured (due to altered *pitta* function of *pachana*), resulting in cyst formation which ultimately leads *vata* obstruction (by obstructing the *gamana* function of *vata* in

proper direction), which in turn aggravates and results into anovulation and oligomenorrhea and impaired growth of endometrium. Hence, the treatment was planned to correct *agni*, eliminate vitiated excessive *kapha dosha* and correct *vata dosha* by providing proper movement of *vata* and proper *pitta* function for follicle maturity and hormonal support.

*Uttarabasti* is the most effective treatment in gynaecological disorders as it purifies and clears the *artavavaha srotas*, controls *apana vayu* function and improve follicular maturity ultimately can improve hormonal support by proper follicle growth. It forms the prime treatment in *Garbhasaya janya roga* <sup>(12)</sup>. *Phalaghrita* is a combination of around 18 herbs with main Ingredients as *Go- Ghrita* (Cow's ghee), *Shatavari*, *Dugdha* (Cow's milk), *Ashwagandha*, *Yashtimadhu*, *Vidari*, *Bala* having *madhura* (sweet), *snigdha* (unctuous) and *sheeta* (cold) quality <sup>(13)</sup>, due to its *madhura, tikta Rasa, sheeta virya, snigdha guna* leads to *brihana, balya, rasayana, vayah sthapana*. It acts as *vata-pitta shamaka* and helps in those pathologies It is said to have *vrishya, rasayana, pusamvatva* and aphrodisiac properties with an added indication in *Vandhyatva* was selected as *Uttarabasti* medicine. *Phalasarpis* act to improve quality of endometrium and achieving *Garbhasthapana* as it established that *Phalasarpis* stimulates

gonadal activity by the stimulatory effect over pituitary ovarian axis <sup>(14)</sup>. *Uttarabasti* acts after absorption through blood circulation of uterus and can act on whole body system as parenteral route. The prime aim of the treatment was to release the obstruction of *Vata* and to established its normal functioning in the *koshṭa* especially in *garbhasaya*.

### CONCLUSION:

Intrauterine *Uttarabasti* may be beneficial in improving endometrial receptivity. In future other uterine receptivity markers can be used to established that *Uttarabasti* acts as enhancer of endometrial receptivity and increases chances of conception and pregnancy outcome especially in cases of PCOS.

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