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## *Uttar Basti* Can Enhance The Outcome Of Intrauterine Insemination?

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### ABSTRACT: -

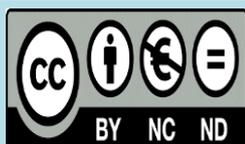
**Background:** Intra uterine insemination is a treatment modality of Assisted Reproductive technology for unexplained infertile couples before going to more invasive and expensive procedures. According to Ayurveda, the major pathogenesis of *Vandhyatva* (Infertility) is *vata* vitiation and it is already said that yoni never be vitiated without *Vata dosha*. *Uttar basti* (Intra uterine Instillation of medicine) is a unique local treatment procedure in gynecological disorders. **Aims and Objectives:** The aim of the study was to evaluate the role of *Uttar basti* (Intra uterine Instillation of medicine) on Intra Uterine insemination in unexplained infertility couples.

**Materials and Methods:** After obtaining CTRI registration, total 20 cases of Unexplained infertility were registered and treated with *Dhanwantar taila uttar basti* followed with pre-ovulatory and post ovulatory Intra Uterine Insemination.

**Results:** The result was assessed using the 'Proportion t test'. After 3 cycle treatment, significant results were observed in terms of clinical pregnancy.

**Conclusion:** *Uttar basti* (Intra uterine Instillation of medicine) was found effective to enhance Intra Uterine insemination success rate and also increasing size of follicle & endometrium thickness.

**Key Words:** Intra Uterine Insemination, *Uttar basti*, *Dhanwantar Taila*, Unexplained Infertility, *Vandhytva*



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## INTRODUCTION:

It is very pleasurable experience for a couple to have a child in their life. When couples get married, they often view parenthood as the next stage in their family life. When couples not achieve conception within one or more years of regular unprotected coitus, it defined as Infertility. Main responsible factors for female infertility are ovulatory disorders (30-40%), Tubal factors (25-35%) and Endometrial factors (1-10%). Male infertility is the prime category in approximately 25% of cases and contributes to a further 15-25% of the remaining cases<sup>1</sup>. In spite of all that, approximately 15% cases of infertility remains unexplained<sup>2</sup>. Intra Uterine Insemination is a simple and cost effective treatment option for unexplained infertile couples before going to more invasive and expensive procedures like IVF. Natural cycle may not be very effective for unexplained infertile couples in comparison to super ovulation with IUI. Ovarian stimulation improves cycle fecundity rate but its increases cost of treatment and carries risk of ovarian hyper stimulation syndrome and multiple pregnancy.

In Ayurveda, infertility considered as *Vandhyatava* (Infertility) and have different prospective about conception. *Ritu* (Menstruation), *Kshetra* (Uterus), *Ambu* (Nutrition) and *Beeja* (ovum and sperm) are described as essential factors for conception. Not only their presence but also functional optimization is necessary for conception. *Doshas* are the root cause of any disease and *Vata dosha* is predominant *dosha* in case of *Vandhyatva*(infertility). The *Basti* karma (medicated enema) is considered as best therapy in all therapies for treatment of vitiated *Vata*

*dosha*. *Uttar basti* (Intra uterine Instillation of medicine) is very unique procedure and important part of *Sthanika chikitsa* in gynecological disorders. The study was plan to see the role and effect of *Uttar basti* along with Intra Uterine Insemination in the management of Unexplained infertility.

## AIMS AND OBJECTIVES:

The study was aimed to evaluate the effect of *Uttar basti* on Intra uterine Insemination in the management of Unexplained infertility.

## MATERIAL AND METHODS:

It was an open-label prospective clinical study. After CTRI registration (CTRI/2019/07/020066) of the study, total 20 patients who fulfilled the criteria of Unexplained infertility were enrolled for the study irrespective of their caste and religion.

### Criteria for selection of cases:

Female patients between 20 to 35 age group attending infertility OPD of *Stree roga evum Prasuti* tantra department were incorporated who had complaint of unable to conceive after cohabiting with husband more than two years and diagnosed as a patient of unexplained infertility either primary or secondary on the basis of standard fertility investigations, which include semen analysis of husband (According to WHO criteria), assessment of ovulation, and tubal patency test.

Patients having Anovulatory cycle, Tubal blockage, Anatomical defect of reproductive tract, tuberculosis, carcinoma, Sexually transmitted disease like VDRL, HIV were excluded from the study. Total 20 patients were registered for the study

and all the patients completed the trial.

### Selection of the drug:

Among all type of *Sneha*, *taila kalpana* is considered as best for *Vata dosha* alleviation. Acharya Charaka quoted that '*n tailadanat paramsti kinchit dravyam visheshena samiranrte*<sup>3</sup>.' With pacification of *Vata*, *taila* is also beneficial for the cleaning of female reproductive tract (*Yoni vishodhan*)<sup>4</sup>. *Dhanwantar taila* mentioned for *Vata dosha* pacification (*sarva vatavikarjit*) and all *Yoni roga* (gynecological disorders) in *Sahstra yoga sangrah*<sup>5</sup>. Taking all these points into consideration, *Taila kalpana* (oil preparations) is selected in the form of *Dhanwantar taila* for '*Uttar basti*'.

### Treatment Protocol:

After cessation of menses one *Matra basti* (therapeutic enema) was given to the patient with *Dhanwantar taila* and next day *Erandamoola kashya* and *Shatpushpa kalka Niruha basti* was given followed by *Yoni dhawan* (vaginal douching) with *panchvalkal kashya* and *Uttar Basti* with *Dhanvantar taila*. Next 2 day's *Uttar basti* was done following *panchvalkal kashya yoni dhawan*. After completion of *Uttar basti*, pre-ovulatory & Post ovulatory Intra uterine Insemination was done. The couples, having failed IUI were subjected to repeat IUI, until pregnancy was achieved or 3 cycle of IUI.

### Criteria for Assessment:

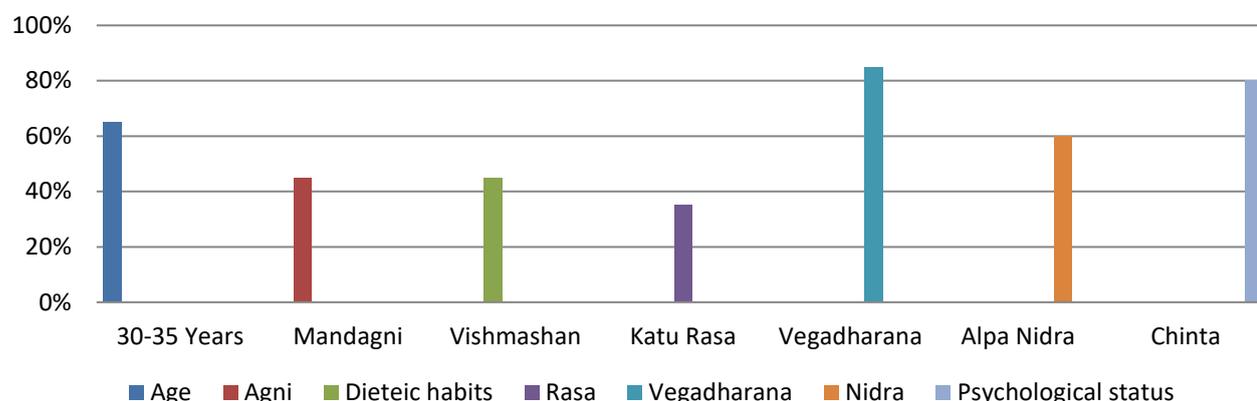
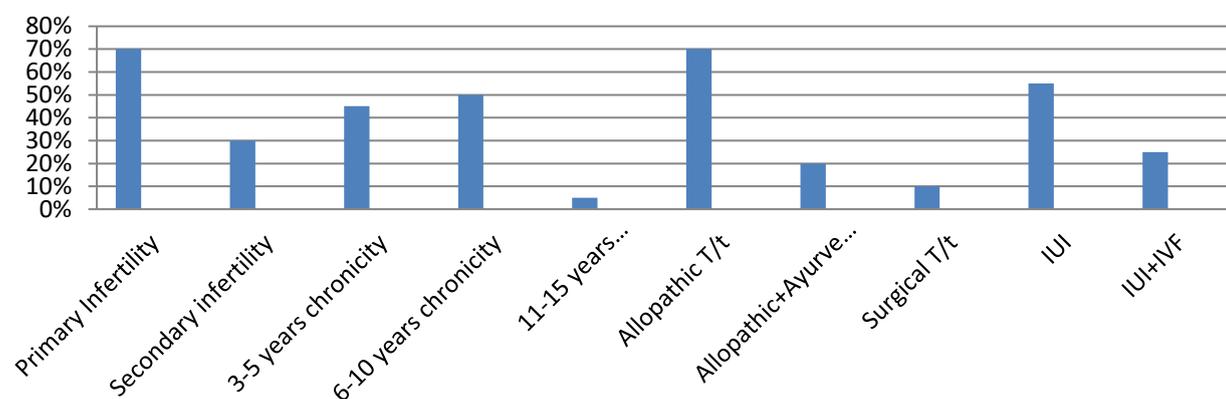
The result was assessed on the basis of clinical pregnancy.

### OBSERVATIONS:

In this study, majority of the patients (65%) were reported from 30-35 years age group followed by

24 -29 years. Maximum patients of this study have already completed treatment at various centers of infertility and gone through some ART therapies also. It might be the cause the maximum patients in this study falls under the higher age group. Increasing age also creates anxiety in the patients. *Agni* is responsible for proper physiological functioning of body and majority of the patients (45%) had *Mandagni*. Maximum patients (45%) had improper dietetic habits (*vishmasana*) which adversely affect the digestive power. Vitiating of *Agni* (digestive power) ultimately disturbs the *Aharpaka* which leads to disease condition. Maximum patients (35%) were having preference of *katu rasa* (pungent) in their diet. *Katu rasa* (pungent) have *Vata* and *Aagneya guna* predominance. If its intake in excessive amount it leads to *Vata dosha* related diseases. In excessive amount, *Katu rasa* (pungent) indicated as '*Avrushyakara*'.

**85% % patients had Vegadharana (suppression of natural urges) history** in context to *Mala* (stool), *mutra* (urine) and *Adhovata vega* (Flatus). These urges are the physiological body reflexes which are generated to eliminate body toxins. All the urges (*Vega*) altered the normal physiology of body by *Vegdharana* (suppression of urges) because they directly cause the vitiating of *Vata dosha* and especially these 3 *Vegas* are affecting the *Apan vayu*. '*Vrishyta* and *klaibyata*' (infertility) both are dependent on *Nidra* (sleep). 60% patients suffering from *Alpa nidra* (less sleep) and it causes the aggravation of *Vata dosha* which may lead to *Vandhyatava* (infertility) and also this type of disturbed sleeping pattern may be due to psychological stress of patients which is a major causative factor in *Vandhytva*. (infertility) (Chart 1&2)

**Chart 1: Observation on Demographic Data (n=20)****Chart 2: Disease related history of Patient (n=20)****Effect of therapy:**

It was observed that After 3 cycle of Intra Uterine Insemination, 7 patients conceived and one patient conceived just next cycle of completion of therapy during follow-up period. Success rate of pregnancy is achieved as 40%, which is significant (proportion

't' test=3.57,  $p < 0.001$ ) in terms of clinical pregnancy. According to type of Infertility, 5 out of 14 patients with primary infertility and 3 out of 6 with secondary infertility had conceived successfully suggesting conception rate of 35.7% and 50% respectively but this difference is not statistically significant. (Table 1&2)

**Table 1: Effect of Therapy**

No. Of Patients	Patients who conceived after IUI	Patients who conceived during Follow-up period	Patients with Negative results	p- value
20	7	1	12	Proportion 't' test=3.57 and $p < 0.001$ )

**Table 2: Effect of therapy according to Type of infertility**

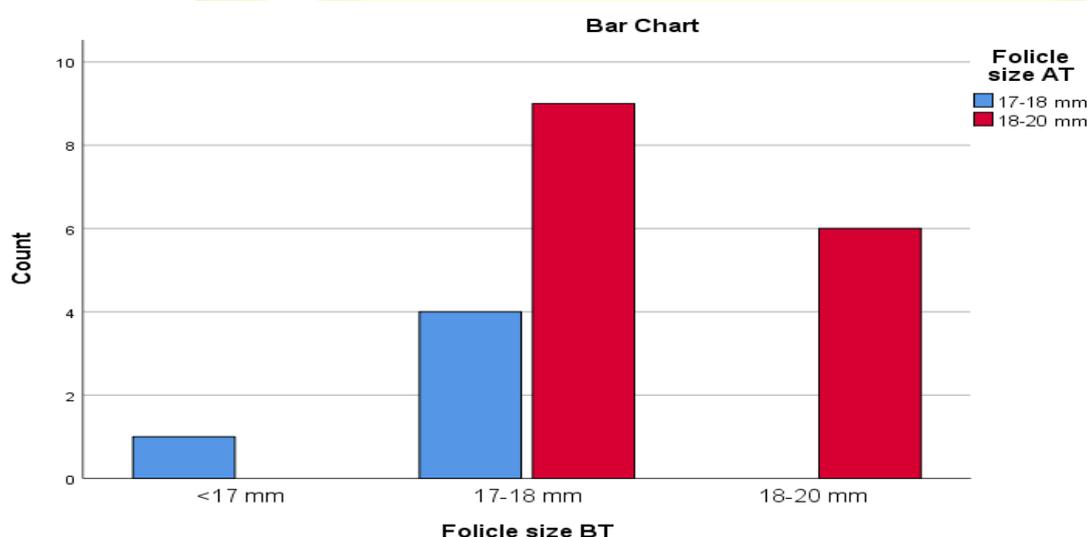
Infertility	Total Patients	patients Conceived	%	Conception Rate (% conceived)
Primary	14	5	35.7	40.0
Secondary	6	3	50.0	

### **Effect of Therapy On size of Follicle and Endometrial thickness:**

After treatment, Improvement in size of follicle was seen in 10 out of 20 patients and all 20 patients'

shows improvement in endometrium thickness. On statistical analysis, Uttar basti was found effective ( $p < 0.001$ ) on improvement of size of follicle and endometrial thickness. (Table 3)

Figure 3: Size of Follicle before and after treatment

**Table 3: Effect of Uttar basti on size of Follicle and Endometrial thickness:**

	BT	AT	Mean Difference	Std. Error Mean	95% Confidence Interval of the Difference		T-Test	DF	Significant (2-tailed)
					UPPER	LOWER			
Size of Follicle (BT-AT)	2.25	2.75	-0.50	0.11	-0.74	-0.25	-4.35	19	0.00
Thickness of Endometrium (BT-AT)	2.65	3.80	-1.15	0.08	-1.32	-0.97	-14.03	19	0.00

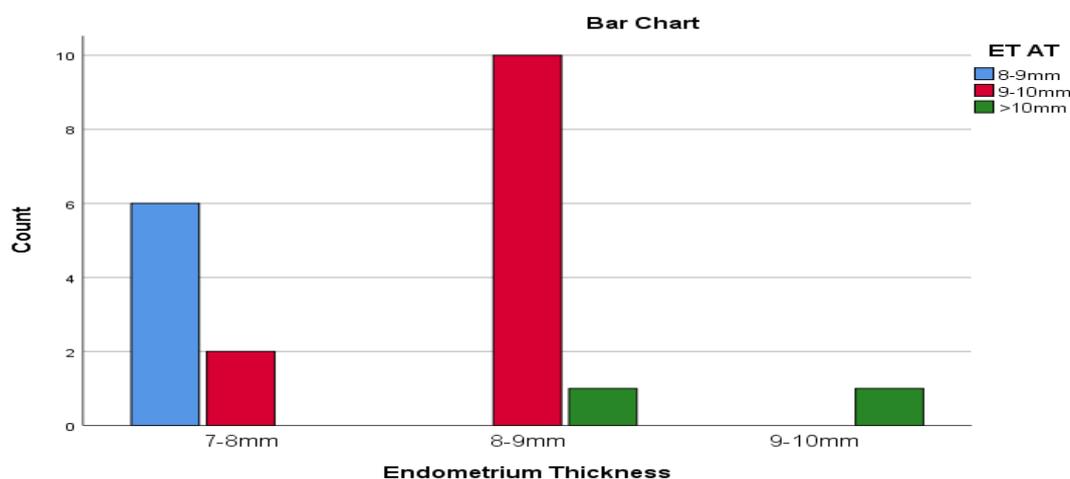


Figure 4: Endometrial thickness before and after treatment

## DISCUSSION:

After analyzing the effect of *Uttar basti* on Intra uterine insemination in terms of clinical pregnancy, highly significant results show the efficacy of *Dhanwantar Taila Uttar basti* on Intra Uterine insemination. Ayurveda accepts *karya-karana bhava* (effect and cause) relationship and according to this theory, any event does not take place without any causative factor. Hence, even if no deformity is seen in diagnostic tests it is not possible that without any malfunction *Vandhyatava* (infertility) happens and in case of unexplained infertility it indirectly indicates insufficiency of essential factors. *Doshas* govern all the functions of body and they are the prime factors to cause any disease condition. In *Vandhyatva* (infertility), the role of *Vata* has certainly an edge over the other two *doshas*. *Uttar basti* has its specific action on *vata dosha* as well as the *Vata anulomana* and *stotoshodhaka* effect of *basti* is well known.<sup>6</sup>

'*Loka and purush*' concept of Ayurveda considers human being as a 'whole' involving body-mind-spirit and not merely a composite of cells, tissues or organs<sup>7</sup>. So, *Uttar basti* acts on whole *Aartvavaha srotas* (channels carrying menstrual blood) and leads to the *Sarvdehic kshetra shudhi* (Body detoxification) instead of *Sthanika kshetra shuddhi*

(Local Cleanliness). *Uttar basti* rejuvenate the cells of endometrium and fallopian tubes and purifies the uterovaginal passage<sup>8</sup>. Acharya Charaka quoted that branches of a tree covered with soft beautiful leaves when it is irrigated at root level and at proper time it gives so many flowers and fruits. Similarly, by the use of *Basti* (medicated enema), person attains health and gets progeny<sup>9</sup>. The medication introduced through *Uttar basti* may be absorbed through the endometrium blood vessels and reach the systemic circulation by which it acts on whole body. Many research studies support this statement. **Cicinelli E. et al (2001)** carried out a study to investigate the mechanisms and kinetics of vagina-to-uterus distribution. In this study, uterine activity appeared after 60 minutes and Thyroid uptake appeared after 180 minutes of vaginal administration of <sup>99m</sup>Tc-pertechnetate<sup>10</sup>. Another study of Golomb G. et al (1993) which carried out on rats concluded that intrauterine administration of both insulin and calcitonin is bioequivalent to subcutaneous injection. These studies suggested that intra uterine drug administration act on whole body by absorbing in systemic circulation<sup>11</sup>.

Oil has *Sneha* (oiliness), *guru* (heavy) and *Ushna* (hot) properties by which it alleviates *Rukhsa* (dry), *laghu* (light) and *sheeta guna* (cold) of *Vata dhosha*.

*Tila taila*, (sesame oil) which is used as a medium in preparation of *Dhanwantar taila* has *Singdha* (unctuousness), *vyavayi* (spreads throughout the body without undergoing any transformation / digestion), *vikasi* (quick spreading), *sukhsma* (fine) and *Garbhashaya shodhana* (cleaning of uterus) properties<sup>12</sup>. Lipophilic actions of *tila taila* (sesame oil), easily facilitate transportation to a target organ and find delivery inside the cell; because cell membrane also contains lipids<sup>13</sup>. Acharya Susruta and Bhava prakash mentioned that *Tila taila* (sesame oil), has both *Brihana* (Nourishing) and *Lekhana* (scrapping) properties. It corrects the constricted *Srotas* (channels) by *Singdha* (unctuousness), *sukhsma* (fine), *mridu* (soft) and *Sara* properties while its *Ushana* (hot), *tikshana* (sharp), *sukhsma* and *Sara* properties facilitate *Lekhana karma* (emaciation). Therefore, due to *Lekhana guna* (scrapping) it corrects *Srotorodha* (obstruction of chaneels) and its *Brihan* (Nourishing) & *Preenan guna* nourishes the channel. *Lavan* (salt) is also one of the ingredients of *Dhnwantar taila*. Acharya charka mentioned that ‘*Salavan sneha*’ (oil preparation with salt) enhance the properties of *Sneha* and also facilitates the entry in *Sukhma srotsa* (fine channels). Wang R et al (2019) study concluded that Pregnancy rate increases in those infertile women who received oil-based contrast medium for tubal flushing in comparison to those women who received water based contrast medium for tubal flushing<sup>14</sup>.

The main ingredient of *Dhanwantar taila* is *Bala moola* (Root of *Sida cordifolia*). By *Guru* (heavy), *singdha* (unctuousness) and *Madhura* (sweet) properties, *Bala* (*Sida cordifolia*) acts on vitiated *Vata dosha* while it treated *Piita dosha* by *Madhura* and *Sheeta* (sweet and cold) properties. It gives strength to the *Aartvavaha srotas* or reproductive tract as its name suggests that it is providing strength or power. Due to ‘*Kshatnashnam*’ property it improves the healing process of reproductive tissues and by ‘*Brihaniya*’ (nourishing) property it stimulates the endometrial growth. Acharya charka mentioned that *Bala* (*Sida cordifolia*) helps in conception & promotes fertility (*Prajasthapan*) and

it is also quoted as ‘*sangrahika-balya-vataharanam*’. Due to these qualities *bala* may enhance the endometrium receptivity which may be helpful to achieve conception.

*Dashmoola dravyas* are mentioned as *Shothahara mahakashya* (Group of medicines which act on shotha/ swelling/edemase) and balance all three *doshas* (*Tridoshahara* properties). Many research studies show its Analgesic and anti-inflammatory properties. *Kola* is good source of vitamin A and C. It has anti-oxidant, wound healing and Anti-inflammatory properties<sup>15</sup>. Katib S.AI. et al study Results show that Vitamin C supplementation significantly increases the endometrial thickness for both fertile and infertile women. This study described that vitamin C may have indirect effect on endometrial thickness by its effect on ovarian hormones of progesterone and estrogen<sup>16</sup>. *Kulatha* (*Dolichos biflorus*) is excellent source of iron and manganese while *Yava* (barley) contains copper, zinc and vitamin E<sup>15</sup>. Many studies suggested the role of micro elements in fertility. Jorge E. chavarro et al study suggested that consumption of iron supplements and non heme-iron may decrease the risk of ovulatory infertility<sup>17</sup>. Zinc also plays an important role in sexual development, ovulation and the menstrual cycle in females and has shown in reducing complications in pregnancy<sup>18</sup>. Bawa R. & Tyagi S. study results show the significantly lower plasma copper concentration in cases of unexplained infertility as compared to control group of subjects. This study concluded that copper deficiency might have a role to play in the etiology of unexplained infertility<sup>19</sup>.

*Triphala*, *vacha* (*Acros calamus*), *kushta* (*Saussurea lappa*) and *ela* (*Elettaria cardamomum*) all these *dravyas* are mentioned as *Yonidoshahara* by Acharya susruta<sup>20</sup>. *Sariva* (*Hemidesmus indicus*) and *Manjishta* (*Rubia cordifolia*) ingredients have *Rakta prasada* (blood purifying) properties while *Rakta Chandan* (*Santalum album*), *shoorparni* and *Vidarikand* (*Pueraria tuberosa*) all are having *Vrashya* (aphrodisiac) property. Acharya Bhavaprakash mentioned *Soya* (Soybean) as *Yoni shoola nuta* (analgesic)<sup>21</sup>. *Shatavari* (*Asparagus*

*Racemosus*) has aphrodisiac, anti-inflammatory and blood purifying properties and it enhances folliculo genesis and ovulation, prepares the womb for conception and prevents miscarriages<sup>22</sup>. All these ingredients of *Dhanwantar taila* act combinedly on *Tridosha* and correct the *Srotorodha* (obstruction of channels). It stimulates the endometrial and ovarian receptors and by systemic circulation it acts on Hypothalamus-pituitary-ovarian axis. So, *Dhanwantar taila uttar basti* influenced the IUI results.

### CONCLUSION:

*Uttar basti* (Intra uterine Instillation of medicine) with *Dhanwantar taila* is highly effective on success of Intra Uterine Insemination as is evident by the results of the study. It is also a cost effective, time saving and easily accessible ayurvedic therapy. Current study was carried out on small sample size for limited time period and it showed hopeful results. Working on large sample and long duration treatment may help to bring better result.

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