

ROLE OF UTTARA VASTI IN REGULATION OF HYPOTHALAMO-PITUITARY - OVARIAN-AXIS

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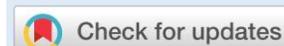
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ABSTRACT

In Ayurveda, the branch *Prasutitantra & Streeroga Vijnana* (Obstetrics & Gynaecology) significantly deals with extended varieties of gynaecological disorders, the best antenatal, intranatal and postnatal care ensuring a healthy mother and child. to ensure the aim and objective, the most efficient procedure *Uttaravasti* (intrauterine medication) is considered a boon for the branch. it is an important therapeutic procedure pertaining to Genitourinary applications in both males and females in *Prasuti Tantra & Streeroga*, *Uttaravasti* involves administration of specific medicated oil, *Ghritam* (ghee) or *Kashaya* (decoction) into the genital tract viz intravaginal or intrauterine. Useful in infertility, spontaneous abortions, fibroids, tubal blockages, DUB, dysmenorrhea etc., which denotes the action of *Uttaravasti* chiefly intended to regulate the most functional aspect of the female the hypothalamo-pituitary-ovarian-axis. intravaginal application of *Uttaravasti* helps in removing infections, facilitate absorption of drug applied. *Uttaravasti* given with lower amounts of medicine removes the stenosis disorders, thereby relieving dysmenorrhea. intrauterine application of *uttaravasti* helps in rejuvenation of endometrium, correction of hyperplasia, removal of lumen blockages thereby restoring the normal functioning of the H-P-O axis by absorption. Thus *Uttaravasti*, the procedure which by outlook understood is far less to its functional efficacy which is clinically experienced on patients.

Keywords: *Prasutitantra, Streeroga, uttaravasti*, hypothalamus, pituitary gland, endometrium H-P-O axis.

INTRODUCTION

Ayurveda, the science of life throws light on healthy living rather than living for longer durations with ailments because the ultimate aim of life i.e. the emancipation is attained only through the chronological attainment of righteousness, wealth obtained through a righteous job, desire for healthy life and progeny and finally the emancipation through the preceding deeds here in the science of *Prasuti tantra and Stree roga* emphasising on assurance of health for two i.e. mother and child postulates certain local procedures for the attainment of *Shodana* (elimination) locally and *Brihmana* (nourishment) of local tissues for proper functioning. The procedure *Uttaravasti*, though not placed as *Panchakarma* but as *Uttara karma* (a procedure that is done after). The medicine administered may be in the form of *Kashaya* or *Sneha*, but administration time is only after one technical *Shodana vasti* (enema for cleansing) course on the patient. In Ayurveda, the place of *Vata dosha* & its function is mentioned as “*Adah kaya*” (lower half of the body). The lower half of the body and the root cause of all gynaecological disorders in *vata dosha*, therefore the *Vatahara* (mitigating *vata dosha*) management “*uttaravasti*” given locally is understood as highly efficacious.

Concept of *Uttaravasti*:

“*Uttara Marga deeyamanatayaa Uttara Vasti sangna*”.

The *Vasti* given as *Paschat Karma* to the *Shodana Vasti* it is termed as *Uttaravasti*. Also, the mode of administration being “*Gudasya Uttaramargavtat*” (administered through the vagina) i.e., Given through the opposite orifice to *Guda Marga* (rectal route) say *Mutrashaya gata* (urethral route) or *Garbhashaya gata*

(Uterine administration). The one more term being significant acc to chakrapani Datta commentary on *Charaka Siddhishthana* is “*Kimva Shrestha Guna Taya Uttaravasti*”. The efficacy of administration is best among all the procedures is named after its effect as “*uttaravasti*.”

The *Uttaravasti* has been explained in 2 points of view i.e.

1. *Mutrashaya Gata Vasti* – through the urinary passage
2. *Garbhashaya Gata Vasti* – vaginal route

Herein, the *garbhashaya gata vasti* in regulating H-P-O- axis is deal with.

Garbhashaya Gata Vasti:

In this type of *Uttara vasti*, the *vasti dravya* is administration into the uterus via a vaginal orifice. This helps in expelling out of *Sthanika dosha* (vitiated), also corrects the whole urogenital system through the carried out active principle into the H-P-O axis through the mucosal absorption of the drug.

Uttaravasti – classification:

The procedure is classified based on many parameters.

- i. Based on drug administered
 - a. *Snaihika Uttaravasti* – *Sneha Dravya* is used as medicine for application and there is no additional *avapa* required for it.
 - b. *Niruha Uttaravasti* – *Kashaya Dravya* Along With *Sneha Nirvapa* is used for the administration of *Uttaravasti*.
 - ii. Based on route of administration
 - a. *Mutrashaya Gata* – urethral route
 - b. *Yonigata* – through vaginal route
 - c. *Garbhashaya Gata* – Intra uterine via a cervical canal

Indications of *Uttaravasti*:

Uttaravasti, being a *Sthanika Chikitsa* has got its limitations for administration, the indication for administering *Uttaravasti* are enumerated as follows

- *Sukra dushti*
- *Shonita* or *Artava dushti* (menstrual abnormalities of female)
- As a *Chikitsa* (management) for *Yonivyapad* – like tubal blockages
- *Vandhya chikitsa* (to regulate hormonal axis)
- In retained placenta (*Apara samsthithi*)

Contraindications:

Garbhashaya Gata Uttara Vasti in virgin women. In *Rajah kala* (menstrual phase) of a woman

Time of administration: The procedure *Uttaravasti* is said to be administered in *Ritu kala* (ovulatory phase) according to classic texts.

To be administered only after 2 or 3 *Asthapana vasti* as the *Shodhana* allows more absorption of the later administered medicine and in *rtukala*, the *dravya* is readily received by the *yonimarga* due to its permeable absorption activity during that particular period.

Probable mode of action: (When administered intravaginally)

The *Uttaravasti Dravya* could act both systemic and local when administered intravaginally. This is through the network of blood vessels existing in the pelvic region say branches of int. Iliac artery, uterine artery and middle rectal and internal pudendal arteries abundantly supply the vaginal walls. Therefore, the vascular effect of vaginal tissues causes the uterine pass effect i.e., transfer of vaginal administered drug into the uterus. It is clear through contemporary evidence-based sciences that the higher concentration of progesterone in the uterus is responsible for better absorption of drugs administered intravaginally. Thus, it is to be understood that the vaginal canal because of its histopathological support, transports the drug across the vaginal membrane.

Transcellular (across epithelial cells) – through diffusion

Para cellular (between epithelial cells – mediated via junctions)

Vesicular transport (through receptors)

Therefore, drug absorption in which it is administered could be absorbed in the following manner

- Dissolution in vaginal layers & membrane penetration
- The dissolution into vaginal fluids

Factors that affect the above mechanism could be

- a. Physiochemical drug properties
- b. Low molecular weight lipophilic form or hydrophilic form
- c. Contact time – prolonged contact time increases absorption.

MODE OF ACTION IN *GARBHASHAYA GATA*

UTTARA VASTI: Theoretically, as per the text, the procedure *Uttaravasti* administered is intended to act on *Garbhashaya* (reproductive system) directly.

The *Virya* (potency) of the drug administered reach into the *Garbhashaya* (uterus) through the following mechanisms.

- Direct passive diffusion through local tissues.
- Through cervical lumen
- Through venous or lymphatic circulation.
- Vascular exchange, diffusion between veins & arteries.

The arterial supply of the uterus is the uterine artery (branch of int. iliac artery), ovarian arteries (branches of the aorta).

The venous drainage of the uterus is into the iliac vein- the drug administered into the uterus acts locally by

FIRST PASS EFFECT.

Through perfusion, it is reported that the drug applied in vaginal tissue reaches and acts on the uterus within 5 hours of application.

The size of particles below 90m TC is studied to be reaching the uterus within a minute indicating a direct transport mechanism involving aspiration through the cervical canal.

The drug administered at the opening of the cervix travels towards the uterus by the osmolarity of the *Sneha dravya* given.

The *Sneha dravya* which remains inside may show systemic effect by being absorbed and --transported into inferior vena cava by vaginal, retro sigmoidal, vesicular, and uterine veins.

In recent time studies, it has been studied that any medicinal formulation placed intravaginally, the drug absorbed in outer 1/3rd of the vagina passes uterus dramatically, influences first uterine pass effect and activating feedback mechanism till hypothalamus.

This process occurs via the following sequel.

Stimulating ovaries----pituitary stimulation-----hypothalamus activation and thereby indicates the nourishment and rebounding functionality in the order vice versa i.e. Hypothalamus---pituitary gland---gonads (ovaries)-----uterus (myometrium, endometrium)

Till pacemakers of the uterus.

DISCUSSION

The fundamentals and basic principles of any science, on which it is primarily based would never be changed but could be practically demonstrated w.s.r to their principles, reliability, and utility in the present-day scenario. Say, the instruments, line of treatment can be modified (keeping the core principles intact).

In the present context, the action of *Uttara vasti* grossly depends on the drug used, method of installation, instrument used etc. Medicine is more likely to exhibit local effects at the target site.

The drug administered in the cervical canal influences cervical factors and feedback to the hypothalamus to rectify cervical factor abnormalities.

The capillaries absorb the medicine, Through and venules, the medicament absorbed by its permeability action and diffusion mechanism where the cell membrane of ovaries may have a diffusion of drug through its permeability.

With this absorption, there may be the promotion of folliculation of primordial follicles. The probable action would be absorption medicine—flowing into the circulation—reaches the hypothalamus and thereby pituitary gland—influences GnRH—may perform to stimulate the ovarian axis. With this, the unseen manifestation of ovulation, visualised as menstruation, is inferred for the proper functioning of the HPO axis in a proper physiological manner.

Intra vaginal *uttaravasti* helps in removing infection, where posterior fornix within pampiniform plexus a rich blood supply, and it may also act as a reservoir of the drug.

Uttaravasti given into cervix (ext. Os) with oil-based drug helps to remove cervical stenosis and to restore the function of the cervix in conception and also as management in dysmenorrhea (w.s.r to a drug applied).

If the drug administered is *Brimhana* in action, it stimulates the secretion of cervical mucus leading to an ascent of sperm physiologically into the uterine cavity.

If the drug is administered as *Uttara Vasti* deep into the intrauterine level, with *Ghritam* based drugs helps in rejuvenation of endometrium, especially where

apart from regular ovulation, poor endometrium causes infertility or scanty menstruation.

In the same manner, *Uttaravasti* with *Lekhana Dravyas* (lipolytic) in hyperplastic conditions of the endometrium is indicated.

Uttaravasti removes lumen blockages by directly acting on obstruction mechanically and restores the normal function of cilia by stimulating it.

As endometrial covering is continuous in the tubes too, it's scraping through *Teekshna (penetrative) Lekhana* action of drug locally, its regeneration also leads to normalisation of tubal functions.

The factor, length of the nozzle used for *uttaravasti* in females is 4 *Angula* from the tip of the nozzle (as mentioned in classics) i.e., 12/14cm approximately 8cm for uterine administration.

The maximum amount of drug that could be administered as mentioned in classics is one *Prakuncha* (~50ml) if it is *Sneha dravya*, one *Prasruta* (80ml) for *Kashaya*.

The drug once administered is expected to stay inside the bladder for a considerable period, still before the micturition reflex comes into action. as far as the mode of administrations of *Uttaravasti* vaginal and intrauterine considered, the vaginal bioavailability varies according to the above-mentioned factors.

The observation being the permeability factor in a normal uterus and atrophied uteri is the same which substantiates that its action is on H-P-O Axis usually.

CONCLUSION

The procedure *Uttaravasti*, being a boon to the science of gynaecology shall not be confined to diseases like infertility. it is mentioned as a line of management for many gynaec disorders as per Ayurveda. Indeed, a better understanding of urothelial permeability could help to optimise the treatment. despite its higher efficacy, clinical research to explore the mode of action *uttaravasti* is yet to be done to know the urothelial permeability.

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