

Uttar Basti in gynecological disorders: A critical analysis

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ABSTRACT

Uttar Basti is an important Panchakarma procedure defined in Ayurvedic classics very well. It is mentioned for the genito-urinary disorders of both, the males & the females. With reference to females, Uttar Basti practiced in today's era differs largely from classical Uttar Basti. This conceptual study deals with a detailed description of Uttar Basti in both the modern as well as ancient ways and also evaluates the points to be taken into consideration for further researches. An elaborative discussion on the controversial points regarding Uttar basti is made with an effort to understand its mode of action in Ayurvedic as well as modern scientific terms.

Keywords : Uttarbasti, Gynecology, Indications, Contraindications, Intrauterine

INTRODUCTION

The mode of administration of Basti is described in the classics in two ways, viz. through: i) anal canal (Basti) & ii) urogenital tract (Uttarbasti). The Bastiyantra is used to administer the medicines through urinary and vaginal passage, for which the term Uttarbasti is given.¹ Though the Uttarbasti deals with both, males & females, but the present discussion is carried out taking females in view only. There are three reasons behind the term Uttarbasti- i) It should be given after Niruhabasti (Niruhata Uttarena)² (Niruhata Uttaro Yasmat Tasmata Uttarsamgyakah)³, ii) It is given through urogenital passage (Uttaren Va Margena Deeyat)⁴, (Uttarmargadeeyamantaya)⁵, iii) It is superior in qualities (Shreshththagunatava)⁵.

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INDICATIONS OF UTTARBASTI^{6 7 8}

Indications of Uttar Basti given in the classics include: conception (Garbham Yonih Tada), pacify Vata (Jite Vayuh), urinary bladder disease (Bastijeshu Vikarashu), diseases caused by prolapse (Yonivibhramshajeshu Cha), Severe Pelvic pain (Yonishuleshu Tivreshu), Gynecological disorders (Yonivyapada , Yonivyadhim), Menometrorrhagia (Asrigdara), retention of urine (Aprasravati Mutre, Mutraghata), incontinence of urine (Bindum Bindum Sravatyapi), menstrual disorders (Dushtam Shonitam), menorrhagia (Pushpodrekam), pathological amenorrhoea (Tasya Nasham), dysmenorrhoea (Kashtam), urinary diseases (Mutradoshan), retention of placenta (Samsathatim Aparas), urinary calculi (Sharkara Ashamarim Cha), groin pain (Vamkshana Shula)& all reproductive tract disorders (Rogeshu Narinam Yoni Garbhashayeshu Cha).

CONTRAINDICATIONS

The only contraindication given in classics is the genital tract in girls (Balanam Apatya Marge Na Diyat Iva⁹).

Time^{10 11} : Uttarbasti should be given during Ritukala (just after menstrual period) after purifying the body with two or three Asthapana Basti, because Garbhasana (Garbhashaiya or Yoni)¹² is ready to absorb Sneha this time. Acharya Charaka & Vagbhata have given very accurate explanation for the selection of proper time by saying that during menstruation, vaginal & uterine orifices are open (Apaavrita yoni), so medicine is taken in better way.

Dose - The dose for Snehana type of Uttarbasti^{13 14}: Acharya Sushruta has given the quantity of Snehana (oleaginous) type of Uttarbasti for urinary tract as one Prasrita (palm of outstretched hand and hollowed it as to hold liquid, filled up to the Svangulimula i.e. base of fingers). For cleansing (Vishodhana) of uterus, it is double i.e. two Prasrita. Acharya has given this dose for the severe diseases and strong patients (Paramvarga) and has left the decision of individual dose on the wisdom of Shalya Chikitsaka (Buddhi Vikalpitam). While commenting on the same, Dalhana again clarifies that the quantity will be half or less to be decided by the physician with his discretion, whether the strength of disease or the patient is half (Madhyam) or less (Hina).¹⁵ Chakrapani has followed Sushruta and repeated the same.¹² Sharangdhara¹⁶ & Bhava Mishra¹⁷ have considered this dose as in adult women, two Pala (96gms) in genital tract & one Pala (48 gms) in urinary tract and in

premature girls, two Karsha (24 gms). Acharya Vagbhata^{18 19} has mentioned it as one Prakumcha (Pala=48gms for adult woman & one Shukti (24 gms) for girls. Aforesaid Matra is Madhyama as per Vagbhata. It should be increased gradually by half & one Karsha in second & third Uttarbasti respectively.

Dose for Niruha Uttarbasti²⁰ : If cleansing is needed by Uttarbasti, its dose is two Prasrita for genital tract in reproductive age group of women (Nullipara or parous) while it is one Prasrita for urinary tract of reproductive age & girls of less than 12 years.

Duration : In day - night, total 2, 3 or 4 Uttar Bastis should be given and the procedure should be continued for three nights with gradual increase in the quantity of oleaginous substance.²¹

Interval²² : After giving rest of 3 days (Trayahmeva Cha Vishramya), the procedure should be repeated for another 3 days.

METHOD OF UTTARBASTI

Instruments (Yantra): Pushpanetra & Bastiputaka

Canula (Pushpa Netra) : The Netra or nozzle of Uttarbasti is termed as Pushpanetra²³. It should be made of silver, gold, brass, bell - metal, tin^{24 25 26} with tapering shape like cow's tail^{27 25 14} & Size^{28 29 30} as mentioned below.

Size & Shape of Uttar Basti canula (Pushpa Netra)

Age	Passage	Length	Circumference of nozzle	Size of lumen	Location of ring (Karnika)
Girl	Urinary	10 finger width	Flower stalk of <i>Malti</i>	Size of a mustard seed	1 finger width
Adult women	Urinary	10 finger width	Size of urethral meatus	Size of <i>Mudga</i> seed	2 finger width
Adult women	Vaginal	10 finger width	Index finger	Size of a <i>Mudga</i> seed	4 finger width

Uttar Basti Putaka : It is not mentioned specifically in classics. Hence, it can be made on the same pattern as mentioned for Guda Basti, but smaller.

POSITION (STHITI)

The woman should be placed in supine position with flexed thighs and elevated knees (Uttanaya Shayanaya Samyak Samkochya Sakthini¹ Urdhvajanve Striye Dadyat Uttanaye²).

PROCEDURE (VIDHI)

The nozzle should be inserted in urinary or vaginal passage slowly with steady hands, following direction of passage.^{3 4 5 6}

PRATYAVARTANA (RETURNING)

Pratyavartana of Snehana is considered essential for Uttarbasti. Acharya Charaka has mentioned administration of Pippalyadi Varti (suppositories), if Basti does not return.⁷ Dalhana has given a very elaborative description for the Pratyavartana of Snehana. These measures are – Yoni Varti, Guda Varti, Sphik – Tadana & Eshana etc.⁸

MODIFIED UTTAR BASTI

Now a days, Uttarbasti described in the classics is being practiced after several modifications. From its indications to contraindications, instruments to method, everything has been modified in a great extent. And only Snehana type of Uttarbasti is in practice. Common indication of Uttar Basti practiced now a days is Bandhyatva (infertility). Very few people are administering it for irregular cycles & Kashtartava. Contraindications being considered these days can be divided in two categories – Absolute contraindications ; Pregnancy & in situ contraceptive device & Relative contraindications ; vaginitis, cervicitis, endometritis, endometriosis & carcinoma etc.

PRE-PROCEDURAL MEASURES (PURVA KARMA)

Yoni Prakshalana by some Kvatha of antiseptic property, Snehana of Abdomen, back, thighs & Legs & Svedana especially Nadi Sveda on back and lower abdomen are done before procedure.

PROCEDURE (PRADHANA KARMA)

The instruments used for the Uttarbasti are Posterior Vaginal Speculum, Anterior Vaginal Wall retractor, Allis' forceps & Uttarbasti cannula fitted with disposable syringe. Instruments & oil are autoclaved and procedure is done in operation theatre. The patient is taken in dorsal lithotomy position. The cleaning is done with antiseptic solution and then medicated oil is inserted with the help of Uttarbasti Cannula, while anterior lip of cervix is in hold with Allis' forceps and patient is in head low position. Instruments are removed and the patient is shifted to bed. She is kept in head low position for at least 2 hours for better absorption of drug from vagina and to prevent any vasovagal shock.

POST-PROCEDURAL MEASURES (PASHCHATA KARMA)

Complete rest in head low position for at least 2 hours, Abdominal hot fomentation with hot water bag is done ,and light diet is allowed after at least 2 hours.

MODE OF ACTION OF UTTAR BASTI

Mode of action of Uttar Basti lies on not only the Pradhana Karma but also on the Purva Karma of it. Snehana & Svedana are very important procedures and are used as both, the Pradhana Karma as well as Purva Karma of several Panchakarma procedure. Snehana & Svedana are very efficacious and multi

faceted procedures, but the current discussion deals with its efficacy as an adjuvant to Uttar Basti only. Though, classics have not specifically emphasized much upon Snehana & Svedana before Uttar Basti, but this approach seems to be genuine and efficacious. Uttar Basti deals with mainly the Apana Vayu, as these all organs are the seat of it. Snehana & Svedana prior to Uttar Basti make the Anulomana of it and thus, Uttar Basti becomes more efficacious. Besides this chances of any type of complication are also less, if Vatanulomana is done prior to procedure. Other than it, Snehana & Svedana just prior to Uttar Basti relax the abdominal muscles. Good relaxation is very important for Uttar Basti, so that uterus should not get irritated by instillation of medicine from outside. If it is not relaxed properly, it may contract at once and may not retain any of the medicine. Snehana & Svedana before Uttar Basti also lessen the pain during and after procedure. Both Snehana & Svedana renders Mriduta (relaxation) to reproductive system, so the patient does not suffer from discomfort or pain during procedure. Yoni Prakshalana done prior to Uttar Basti with Kvatha of antiseptic property nullifies the possibility of any type of infection as a complication.

Mode of action of Uttar Basti can be understood in two ways

LOCAL EFFECT OF UTTAR BASTI

Effect of Uttar Basti depends on various points; like method, instrument, drug used etc. If medicine is put in cervical cavity, it may act more on the cervical factors. For the factors like cervical stenosis, a Katu - Ushna Taila based medication can be more useful, while for increasing the secretion of mucous from cervical glands, a nutritive & Madhura - Shita Ghrita based medicine will be more efficacious. In the same way, drug selection in ovulatory & tubal factor will be totally different from each other. On ovary, the effect of drug will be after absorption and then by promoting the Hypothalamo - Pituitary - Ovarian axis, while in tubal block, Uttar Basti

acts locally. In ovulation, a drug with Snehana property can be good while for tubal block, a drug with Lekhana Karma will be better. Advantage of intra uterine instillation of oil is proved in modern science also as it is said that approximately 30% of the patients who have normal hysterosalpingography, conceive over the following 6 months and it was thought to be a characteristic of only oil - based contrast medium.⁹ There has been explained another therapeutic benefit of HSG with oil-based contrast media. Some have suggested that the injection of dye may dislodge intratubal mucus plugs, stimulate the tubal cilia, or break up intratubal adhesions.¹⁰ Apart from this, Uttar Basti may also stimulate certain receptors in endometrium, leading to correction of all the physiological processes of reproductive system. It may also helps in rejuvenation of endometrium.

Thus, mode of action of Uttar Basti can be understood in following ways

1. Intra vaginal Uttar Basti helps in removing the infections, if given with antiseptic drugs
2. Intra vaginal Uttar Basti may also facilitate the absorption of drug, as posterior fornix has a very rich blood supply and it may also act as reservoir of drug, when patient is lying down in head low position after Uttar Basti
3. Intra cervical Uttar Basti with oil based drug helps to remove the cervical stenosis and to restore the function of cervix in conception and helps to treat dysmenorrhoea caused by this stenosis
4. Intra cervical Uttar Basti with Bhrimhana drugs may stimulate the secretion of cervical mucous leading to ascend of sperms in uterine cavity
5. Intra uterine Uttar Basti with ghrita based Snehana & Brimhana drugs helps in rejuvenation of endometrium, especially where apart from regular ovulation, poor endometrium is causing infertility or scanty menstruation
6. In cases of menorrhagia due to hyperplastic endometrium, intra uterine Uttar Basti with Lekhana dravyas may help
7. For tubal factor of infertility, a high intra uterine Uttar Basti with Lekhana dravya acts

in two ways; 1) It removes the blockage of tubal lumen by directly acting on obstruction mechanically, 2) It restores the normal function of tubal cilia by stimulating it and can also normalize the function of fallopian tubes by scraping & regenerating the endometrial lining of the tubes, 3) It removes the intatubal mucus plugs & 4) It breaks intratubal adhesions.

SYSTEMIC EFFECT OF UTTAR BASTI AFTER ABSORPTION

It seems that Ayurveda had a clear distinguishing approach between oral & parenteral route of drug administration from the very beginning. Thus, Acharyas have described the administration of drug from almost all the open organs and has considered the Basti (rectal administration) the most efficacious. On the same pattern, Uttar Basti can also act after getting absorbed from rich blood circulation to uterus and posterior fornix. Then, it may act on whole body system and as a parenteral route. On ovulatory factor and certain other Yonivyapada & gynaecological disorders related to Bandhyatva, it may act by stimulating some neuroendocrine pathways circulation after getting absorbed. Thus, Uttar Basti can be taken as a parenteral route of administration for reproductive diseases, as it can act both, locally as well as systemically.

DISCUSSION

The most controversial point regarding Uttarbasti emerges its dose. The dose mentioned by various classics is different and creates conflicts, as it is mentioned from very low doses to very high doses (up to 100 ml on an average). The dose calculated for Snehana type of Uttarbasti on the basis of description given by Acharya Sushruta comes around 10 ml. (on the basis of Svangulimula Sammitam), while Acharya Sharangdhara has given it approximately 100 ml. This large difference in doses can be due to different approach of Acharyas. Dose indicated by Acharya

Sushruta is accurate for intra uterine Uttar Basti (IUUB), as the capacity of uterus is approximately 03 ml, while the dose given by Acharya Sharangdhara seems to be appropriate for intra vaginal Uttar Basti. Acharya Vagbhata has mentioned the successive increment of the dose of Uttar Basti in second and third Basti and so on. This view of Acharya is quite scientific and logical as with each Uttar Basti, the capacity of uterus to retain the medicine may increase.

At present, Uttar Basti is limited to a very few gynaecological diseases, and is not applied to disorders other than certain conditions like infertility and irregular menstruation. But classics have indicated Uttar Basti for all kind of gynaecological disorders. This Ayurvedic approach seems to be quite scientific and looks as route of administering the drug locally on target organs. Classics have mentioned role of Uttar Basti on all the disorders from Yonivyapada to Artavadushti, from Bandhyatva to prolapse and even in both scanty as well as heavy menstruation. Though, it looks contradictory on first sight, but, actually, there is no controversy at all. Uttar Basti is just a method of administration of drug and, it is the drug which should be selected as per indication, not the Uttar Basti. In those Yonivyapada & Artavadushti, which are related to some infective conditions, Niruha type of Uttar basti can be given with drugs having antiseptic properties. Keeping this point in view, such diseases are not considered as absolute contraindications for Uttar Basti. In Kashtartava, it may help to remove stenosis and can facilitate the expulsion of blood leading a decrease in pain, if given intra cervical with some oil. In cases of prolapse, Niruha type of Uttar Basti with Stambhaka Dravyas will lessen the discharges and infection, while an Anuvasana type of Uttar Basti may help in restoring the normal tone of pelvic musculature leading to correction of prolapse or at least prevention from further prolapse.

Acharya Sushruta has considered both, Niruha as well as Anuvasana type of Uttarbasti. It denotes that the Uttarbasti was used for both the Shodhana (cleansing) as well as Shamana (pacifying) purpose. These days,

Uttar Basti is not given in decoction based medium (Niruha). But, as it is mentioned by Sushruta very clearly, it was in practice those days. It seems that Niruha or Anuvasana was decided as per the requirement and the underlying pathogenesis. For infective type of disorders, Niruha type of Uttar Basti looks more appropriate, while for nutritive purpose & in cases of Bandhyatva, Anuvasana type of Uttar Basti can be better. It is very obvious that very little dose of Uttar Basti Dravya can reach to peritoneal cavity, as most of it returns. In several investigative procedures, various dyes are injected through the uterine cavity to pass through fallopian tubes. All of it gets absorbed there. The same type of absorption can be assumed for the Ayurvedic drug instilled by Uttar Basti, provided proper antiseptic care has been taken. Drug injected on this pattern can not only get absorbed, rather can work on various conditions like peritubal adhesions, endometriosis, pelvic inflammatory disease & ovarian cyst etc. Yet, undoubtedly, serious research is needed in this aspect.

Though, Acharyas have not classified Uttar Basti on the basis of vaginal or uterine, but it should be considered on these bases, as the indications given by classics cover several infectious disorders, where Uttar Basti can work only if it is intra vaginal. On the other hand, there are several indications of Uttar Basti where intra uterine Uttar Basti is the mandatory. Inclusion of all the gynecological diseases in the indications gives an idea about the different methods of Uttar Basti. Only one standardized method can not be appropriate for all the diseases. There must have been different methods to perform Uttar Basti in different diseases. As Uttar Basti performed in all the Yoni Vyapadas can not be the same. It should be different and based on cleansing in infective condition like Pittala & Shleshmala, while it will be more nutritive in cases of Bandhyatva.

In the same way, Uttar Basti can not be the same for all the factors of Bandhyatva. For cervical factor, the medicine should be injected in cervical cavity, while in uterine factor, it should be instilled in endometrial cavity. To treat the tubal blockage, medicine should be put in the uterine cavity, but nearer to the

fundus and uterine cornu, so that it must reach up to the fallopian tubes. For cervical as well as ovarian factor, it is not essential to negotiate the internal os, but for uterine and tubal factors, to negotiate the internal os is the mandatory.

Now a days, either Karman's cannula is used for Uttar Basti or especially designed metallic one. Both the cannula are long, thin and used by inserting inside the uterine cavity. Uttar Basti cannula practiced these days is turned in the shape of uterine sound to pass it through the uterine cavity. But the Pushpa Netra defined by Acharyas seem to be different from these canulas and appears nearer to Leech Wilkinson's canula. Leech Wilkinson's canula is a straight metal canula with a fixed conical collar at the tip and spiral grooves over it.¹¹ The lumen and the outer periphery of the Pushpa Netra as told by Acharyas is equal to Mudga seed and index finger respectively, while its shape is similar to a flower bud. These all the characteristics of Uttar Basti Canula (Pushpa Netra) makes this nearer to something like Leech Wilkinson's canula. With this type of canula, more of the medicine can retain inside increasing its efficacy. Another very important point regarding Uttar Basti canula is that, it automatically lessens the possibility of ascending infection, as it is the medicine, what goes inside the uterine cavity and not the canula.

Because of influence of modern science, it is said that oil embolism can be a complication of Uttar Basti. But Ayurveda itself has ruled out the possibility of it. The phenomenon of Pratyavartana, which is considered essential for Snehana type of Uttar Basti, automatically rules out the possibility of oil embolism. All the classics have forced on the Pratyavartana and have given the management, if it does not occur. It denotes that Ayurveda already knows the importance of returning of oil/ghrita and does not allow any type of embolism, and that is why it emphasizes much on the Pratyavartana.

Another allegation, which Uttar Basti faces is the possibility of ascending infection & PID as a complication. By going through the depth of classical description, it does not seem to be

contraindicated in infectious conditions, rather, looks indicated. In several infectious conditions, especially antibiotic resistant & recurrent urogenital infections, certain Ayurvedic medicines and measures give very good results. Possibility of PID with Uttar Basti is very minimal and is there as much as it can be with any other operative procedure, if proper antiseptic care is not taken before, during and after procedure. And if it is given with some antiseptic medicine, it will definitely remove the infection.

CONCLUSION

Thus, Uttar Basti is a minor operative Ayurvedic procedure, which can be performed in different ways depending upon the purpose to achieve. By considering all the description given in classics, it seems to be a local as well as systemic (parenteral) route of administration to administer the medicine directly on the target organs. Classics have taken it as a broad umbrella which can cover all the diseases of urogenital tract. Uttarbasti practiced now a days seems to be only a part of Uttarbasti, not Uttarbasti as a whole. Only Anuvasana type of Uttar Basti is in practice these days and is generally used for Bandhyatva only, but it can be evaluated for its efficacy in several other gynecological disorders by some experimental & clinical researches. Niruha type of Uttar Basti can also be evaluated for some infectious and other conditions. Uttar Basti can also be evaluated for any increase in efficacy and easy to perform the procedure by changing the shape of canula to somewhat similar to Pushpa Netra. After some more serious researches, it can be established whether the infectious diseases, menorrhagia & prolapse etc. conditions are really contraindications as per today's belief or they are the indications, as told in Ayurvedic classics.

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REFERENCES

1. Tiwari P.V., 2005, Ayurvediya Prasuti tantra Evam Stri Roga, Chaukhamba Orientalia, Varanasi, p 479.
2. Vagbhata, Ashtanga Samgraha, A. S. Su. 28/ 9, 'Saroj' Vyakhya, eds. Dr. Ravi Dutt Tripathi, Chaukhamba Samskrita Pratishthana, Delhi, 1999.
3. Bhavamisra, Bhavaprakasha, B. P. Purva 5/ 172 , 'Vidyotini' commentary by Bramha Shankar Mishra, Chaukhamba Sanskrit Academy, Varanasi, 2002.
4. Vagbhata, Ashtanga Samgraha, A. S. Su. 28/ 9, 'Saroj' Vyakhya, eds. Dr. Ravi Dutt Tripathi, Chaukhamba Samskrita Pratishthana, Delhi, 1999.
5. Charaka, Charaka Samhita, Chakrapani commentary on Ch. Si. 9/50, 'Ayurveda Dipika' Vyakhya, Chaukhamba Samskrita Samsthana, Varanasi, 1984.
6. Charaka, Charaka Samhita, Chakrapani commentary on Ch. Si. 9/62-64, 'Ayurveda Dipika' Vyakhya, Chaukhamba Samskrita Samsthana, Varanasi, 1984.
7. Sushruta, Sushruta Samhita, Su. Chi. 37/125 - 126, 'Ayurveda Tatva Samdipika' vyakhya, eds. Kaviraja Dr. Ambnika Dutta Shastri, Chaukhamba Samskrita Samsthana, Varanasi, 2003; 1.
8. Vagbhata, Ashtanga Samgraha, A. S. Su. 28/ 62, 'Saroj' Vyakhya, eds. Dr. Ravi Dutt Tripathi, Chaukhamba Samskrita Pratishthana, Delhi.
9. Charaka, Charaka Samhita, Chakrapani commentary on Ch. Si. 9/66, 'Ayurveda Dipika' Vyakhya, Chaukhamba Samskrita Samsthana, Varanasi, 1984.
10. Charaka, Charaka Samhita, 'Vidyotini' Hindi commentrary, Ch. Si. 9/62 Eds. Pt. Kashinath Shastri & Dr. Gorakhnath Chaturvedi, Chaukhamba Bharti Academy, Varanasi, 2004.
11. Vagbhata, Ashtanga Samgraha, A. S. Su. 28/ 62 & 70, 'Saroj' Vyakhya, eds. Dr. Ravi Dutt Tripathi, Chaukhamba Samskrita Pratishthana, Delhi, 1999.
12. Charaka, Charaka Samhita, Chakrapani commentary on Ch. Si. 9/62, 'Ayurveda Dipika' Vyakhya, Chaukhamba Samskrita Samsthana, Varanasi, 1984.
13. Sushruta, Sushruta Samhita, Su. Chi. 37/106, 'Ayurveda Tatva Samdipika' vyakhya, eds. Kaviraja Dr. Ambnika Dutta Shastri, Chaukhamba Samskrita Samsthana, Varanasi, 2003; 1.

14. Vagbhata, 1999, Ashtanga Samgraha, A. S. Su. 28/73, 'Saroj' Vyakhya, eds. Dr. Ravi Dutt Tripathi, Chaukhamba Samskrita Pratishthana, Delhi, 1999.
15. Sushruta, Sushruta Samhita, Dalhana commentary on Su. Chi. 37/106 'Ayurveda Tatva Samdipika' vyakhya, eds. Kaviraja Dr. Ambnika Dutta Shastri, Chaukhamba Samskrita Samsthana, Varanasi, 2003; 1.
16. Sharangdhara, Sharangdhara Samhita U.7/9 eds. Dr. Bramhananda Tripathi, Deepika Vyakhya, Chaukhamba Surabharati Prakashana, Varanasi, 2007.
17. Bhavamisra, Bhavaprakasha, Pu. 5/181, 'Vidyotini' commentary by Bramha Shankar Mishra, Chaukhamba Sanskrit Academy, Varanasi, 2002.
18. Vagbhata, Ashtanga Samgraha, A. S. Su. 28/73, 'Saroj' Vyakhya, eds. Dr. Ravi Dutt Tripathi, Chaukhamba Samskrita Pratishthana, Delhi, 1999.
19. Vagbhata, Ashtanga Samgraha, A. S. Su. 19/80, 'Saroj' Vyakhya, eds. Dr. Ravi Dutt Tripathi, Chaukhamba Samskrita Pratishthana, Delhi, 1999.
20. Sushruta, Sushruta Samhita, Su. Chi. 37/116, 'Ayurveda Tatva Samdipika' vyakhya, eds. Kaviraja Dr. Ambnika Dutta Shastri, Chaukhamba Samskrita Samsthana, Varanasi, 2003; Vol.1
21. Charaka, Charaka Samhita, Chakrapani commentary on Ch. Si. 9/70, 'Ayurveda Dipika' Vyakhya, Chaukhamba Samskrita Samsthana, Varanasi, 1984.
22. Vagbhata, 1999, Ashtanga Samgraha, A. S. Su. 28/75, 'Saroj' Vyakhya, eds. Dr. Ravi Dutt Tripathi, Chaukhamba Samskrita Pratishthana, Delhi, 1999.
23. Charaka, Charaka Samhita, Chakrapani commentary on Ch. Si. 9/50, 'Ayurveda Dipika' Vyakhya, Chaukhamba Samskrita Samsthana, Varanasi, 1984.
24. Charaka, Charaka Samhita, 'Vidyotini' Hindi commentrary, Ch. Si. 9/50-51 Eds. Pt. Kashinath Shastry & Dr. Gorakhnath Chaturvedi, Chaukhamba Bharti Academy, Varanasi, 2004.
25. Nibandhasamgraha commentary on Sushruta Samhita, Dalhana Acharya, Chowkhamba Krishnadas Academy, Su. Chi, 2004; 37/100
26. Vagbhata, Ashtanga Samgraha, A. S. Su. 19/9, 'Saroj' Vyakhya, eds. Dr. Ravi Dutt Tripathi, Chaukhamba Samskrita Pratishthana, Delhi, 1999.
27. Charaka, Charaka Samhita, 'Vidyotini' Hindi commentrary, Ch. Si. 9/51 Eds. Pt. Kashinath Shastry & Dr. Gorakhnath Chaturvedi, Chaukhamba Bharti Academy, Varanasi, 2004.
28. Charaka, Charaka Samhita, 'Vidyotini' Hindi commentrary, Ch. Si. 9/65-66Eds. Pt. Kashinath Shastry & Dr. Gorakhnath Chaturvedi, Chaukhamba Bharti Academy, Varanasi, 2004.
29. Sushruta, Sushruta Samhita, Su. Chi. 37/101 - 103, 'Ayurveda Tatva Samdipika' vyakhya, eds. Kaviraja Dr. Ambnika Dutta Shastri, Chaukhamba Samskrita Samsthana, Varanasi, 2003; 1.
30. Vagbhata, Ashtanga Samgraha, A. S. Su. 28/64 & 71, 'Saroj' Vyakhya, eds. Dr. Ravi Dutt Tripathi, Chaukhamba Samskrita Pratishthana, Delhi, 1999.
31. Charaka, Charaka Samhita, 'Vidyotini' Hindi commentrary, Ch. Si. 9/67 Eds. Pt. Kashinath Shastry & Dr. Gorakhnath Chaturvedi, Chaukhamba Bharti Academy, Varanasi, 2004
32. Sushruta, Sushruta Samhita, Su. Chi. 37/114, 'Ayurveda Tatva Samdipika' vyakhya, eds. Kaviraja Dr. Ambnika Dutta Shastri, Chaukhamba Samskrita Samsthana, Varanasi, 2003.
33. Charaka, Charaka Samhita, 'Vidyotini' Hindi commentrary, Ch. Si. 9/68 Eds. Pt. Kashinath Shastry & Dr. Gorakhnath Chaturvedi, Chaukhamba Bharti Academy, Varanasi, 2004.
34. Sushruta, Sushruta Samhita, Su. Chi. 37/115, 'Ayurveda Tatva Samdipika' vyakhya, eds. Kaviraja Dr. Ambnika Dutta Shastri, Chaukhamba Samskrita Samsthana, Varanasi, 2003; 1.
35. Sharangdhara, Sharangdhara Samhita U.7/8 Eds. Dr. Bramhananda Tripathi, Deepika Vyakhya, Chaukhamba Surabharati Prakashana, Varanasi, 2007.
36. Bhavamisra, Bhavaprakasha, B. P. Purva 5/180,182, 'Vidyotini' commentary by Bramha Shankar Mishra, Chaukhamba Sanskrit Academy, Varanasi, 2002.
37. Charaka, Charaka Samhita, Chakrapani commentary on Ch. Si. 9/58-60, 'Ayurveda Dipika' Vyakhya, Chaukhamba Samskrita Samsthana, Varanasi, 1984.
38. Sushruta, Sushruta Samhita, Dalhana commentary 37/117 - 123 'Ayurveda Tatva Samdipika' vyakhya, eds. Kaviraja Dr. Ambnika Dutta Shastri, Chaukhamba Samskrita Samsthana, Varanasi, 2003; 1
39. Alper M M, Gareus P R, Spence J E, Quaringtom A M, Pregnancy rate after HSG in oil and water based contrast media, Obstet Gynael, 1986; 68: 6-9.
40. Stumpf P G, March C M, Febrile morbidity following hysterosalpingography: identification of risk factors and recommendation for prophylaxis, Fertil Steril, 1980; 33: 487-92.
41. Doshi H., Companion for obstetric and gynec practical examination, Arihant publishers,, 29.