

UDAVARTINI YONIVYAPADA: A REVIEW ARTICLE

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ABSTRACT

Yoni Vyapada is the term used in Ayurveda to describe diseases of the female reproductive system, also known as gynaecological disorders. God has given the female the most valuable gift of motherhood.^[1] The preparation for motherhood begins at puberty, when Rajah-Pravriti (menstruation) begins.^[2] By the age of 16, it is fully completed, and she is capable of bearing children. "Udavarta yonivyapad" is one of 20 "yonivyapadas" affected by "vata." This udavartini yonivyapad may be associated with primary dysmenorrhea in modern science. Dysmenorrhea, also known as "painful menstruation," is one of the most distressing issues for adolescent girls and women. Ayurveda explains that dysmenorrhea is caused by vitiated vata, which causes pain and difficulty passing menstrual blood. The upward movement is known as udavrittam. Primary dysmenorrhea severe enough to cause incapacitation occurs in about 15-20% of cases.^[3] Udavarta Yonivyapada, or painful menstruation, is a common problem among females of reproductive age, with a detailed pathophysiology and

treatment in the classical Ayurvedic literature.^[4] Acharya Charaka's reference to "Arthave Sa Vimukthe Tu Tat Kshanam Labhate Sukham" supports the close relationship between Udavarta and spasmodic dysmenorrhea. Udavartha Yonivyapath is caused by Vegodavarthana, which results in Pratiloma Gati of Apana Vata and Rajas. So, treatment should aim to alleviate pain by normalising the direction of menstrual flow, which in turn normalizes the vitiated Apana Vayu. The current paper aims to incorporate all references to Udavartha, including Nidana Panchakas from Ayurvedic classics.

KEYWORDS: Udavarta Yonivyapada, Uttarbasti, Kshobha Artava, Vatanulomaka, Dysmenorrhea.

INTRODUCTION

Women are an important part of both society and the family. A healthy woman is the foundation of a healthy family, as she provides for future generations. The concept of having a healthy yoni is important for women all their lives, from puberty to after childbirth. The woman serves as the foundation for reproduction, which includes conception, nurturing, and childbirth. As a result, her health is critical in developing a successful household plan. Women are a vital part of both society and the family.^[6]

Yoni refers to the female reproductive organs. Vyapada means derangement, so yonivyapad refers to the derangement of the yoni. Yoni derangement is primarily caused by an imbalance in vata dosha. Vata, according to Ayurveda, is the cause of pain. "Apanvata" has been regarded as a critical component in the treatment of gynaecological disorders. Normal menstruation is the function of apanvata, and painful menstruation is classified as 'apanvatadushti'.

"Udavarta yonivyapad" is one of the 20 "yonivyapadas" that is heavily influenced by "vata." Dysmenorrhea, according to Ayurveda, is caused by vitiated vata, which causes pain and difficulty expelling menstrual blood. The upward movement is known as udavrittam.

This udavartini yonivyapad can be co-related to primary dysmenorrhea of modern science. Dysmenorrhea meaning "painful menstruation" is one of the major distressing factors in adolescent girls and women. It is one of the most frequent gynaecological complaints and its incidence becomes higher with the degree of civilization of the community.^[7] The incidence of primary dysmenorrhea of sufficient magnitude with incapacitation is about 15–20 percent.

It may be categorized into two types.

- 1) Primary Dysmenorrhea
- 2) Secondary dysmenorrhea

^[5]Udavartini being one of the Yonivyapada which occurs approximately 50% of menstruating women, and its reported prevalence has been highly variable (e.g., 45-95%) of women of reproductive age.

According to ayurveda

[6] Acharya charaka has mentioned that yoniroga can't occur without vitiation of vata. Pain is the main feature of kashtartava, so it has a strong relationship with vata.

Charaka believed that suppressing natural urges causes vayu to ascend in the genital tract. This can make it difficult for women to discharge menstrual blood due to its upward tendency, resulting in pain. She feels relief almost immediately after the menstrual blood has been discharged. The wise refer to menstrual blood as 'udavartini' because it flows upward. According to the madhukosha commentary, pain is caused by all-around vayu movement. Most women experience minor pain during menstruation; dysmenorrhea is diagnosed when the pain is severe enough to prevent normal activities or necessitate medication.

AIMS AND OBJECTIVES

The present paper is aimed at incorporating all the references regarding Udavarttha including Nidana Panchakas from Ayurvedic classics.

MATERIALS AND METHODS

A literature search for the term 'Udavarta' in Brihatrayee and Lagutrayee, as well as available commentaries, online resources, and journals, was conducted during this work.

Some modern books are also used as references.

Need for the study

Menstrual pain from primary dysmenorrhea is commonly seen in gynaecological practice. Over 70% of teenagers and 30-50% of menstruating women experience some level of discomfort, with 23.2% experiencing severe pain within the first three days.

Derivation of Yonivyapada

1. The term Yonivyapada consists of two words: Yoni and vyapada.
2. The word 'yoni' comes from the root 'yu' and the suffix 'ni', which means to unite. The word 'vyapad' refers to disorders or diseases.

In the classics, the term "yoni" refers to various female reproductive organs, including the vulva, vagina, external genital organs, cervix, and uterus. Diseases or vyapads that affect these organs are classified as "yonivyapada."

Yonivyapads are twenty in number yonivyapada is categorized according to the dominant doshas, just like in brihatraye.

Samhitas	Total no	Vataja	Pittaja	Kaphaja	Dwandaja	Tridoshaja	Krimija
Cha.Sa	20	11	3	1	4	1	-
Su.Sa.	20	5	5	5	-	5	-
A.S	20	11	2	1	4	1	1
A.H.	20	11	2	1	5	1	-
Ma.Ni.	20	5	5	5	-	5	-
Bha.P.	20	5	5	5	-	5	-
Y.R.	20	5	5	5	-	5	-
Sha.Sa	20	11	3	1	4	1	-

^[15]According To Charaka

- 1) Vataja:- Vatiki, Acharana, Prakcharana, Udavarta, Putraghni, Antarmukhi, Suchimukhi, Sushka, Shandi, Mahayoni.
- 2) Pittaja:- Paittiki, Rakta Yoni, Arajaska.
- 3) Kaphaja:- Shlaishmiki.
- 4) Tridoshaja:- Sannipatiki.
- 5) Vata-Pittaja :- Paripluta, Vamini.
- 6) Vata-Kaphaja:- Upapluta, Karnini.

^[16]According To Sushruta

- 1) Vataja: - Vatala, Vandhya, Vipluta, Paripluta, Udavarta.
- 2) Pittaja: - Paittiki, Rudhirakshara, Sramsini, Putraghni, Vamini.
- 3) Kaphaja: - Atyananda, Karnini, Acharana, Aticharana, Shleshmaja
- 4) Tridoshaja : - Shandi, Phalini, Mahati, Suchivaktra, Sarvaja.

^[11]According Ashatanga Sangraha

- 1) Vataja: - Vatiki, Aticharana, Prakcharana, Udavarta, Jataghni, Anthamukhi, Suchimukhi, Sushka, Vamini, Shandi, Mahayoni.
- 2) Pittaja : - Paittiki, Rakta
- 3) Kaphaja : - Shaishmiki.
- 4) Sannipataja : - Sannipataki.
- 5) Vata-Pittaja : - Lohitakshaya, Parilpluta
- 6) Vata-Kaphaja : - Upapluta, Karnini.
- 7) Krimija: - Vipluta.

- **Udavartini Yonivyapada**

This is one of the Vimshati Yonivyapads mentioned by all Acharyas. According to all Acharyas, Vata is the root cause of Udavartini Yonivyapad. Acharya Charaka introduced the term Udavartini Yonivyapad.

Other Acharyas used different terms, such as udavarta and udavrutta.

Nirukti

The act of moving upward. In Udavarta, Vata moves upward and circularly.

Definition

^[4] Natural urges can cause aggravated vata to move in the opposite direction, filling the yoni. This yoni is seized with pain and initially throws or pushes the raja upward before releasing it with great difficulty. The lady feels relieved immediately after raja's discharge. Udavarta yonivyapada is a condition in which raja moves upwards or in the opposite direction.^[56]

According to sushruta, in addition to painful, frothy menstruation, there are other vata-related pains.

^[10,11] Both vagbhatas followed charaka, and indu added the discharge of clotted blood.

Book yogratnakara had added the discharge of frothy menstrual blood associated with kapha, with difficulty.

Udavartini is the urdhvagamana of rajas, meaning it is taken upwards by morbid Vata.

^[12] In Madhukosha Teeka, Udavarta refers to the condition where.

Morbid Vata causes the rajas to rise and then discharge with difficulty. Acharyas described the following symptoms in Udavartini Yonivyapad: Rajah discharges with difficulty, resulting in painful menstruation.

Menstrual blood discharge provides immediate pain relief.

Nidana

⁽⁴⁾ Nidana is the first step in Nidanapanchaka towards Vyadhi Utpatti. This is the main reason to understand 'Vyadhi Utpatti Krama'. It helps diagnose and treat diseases by assessing the probable dosha and dushya samurchana in vyadhi.

There are two types of nidana: Samanya and Vishesha. Yonivyapads use Samanya nidanas.

Samanya nidanas of yonivyapada

1) Mithyachara encompasses both mithya ahara and mithya vihara.

- Mithya Aahara.
 1. Anashana
 2. Alpashana
 3. Atyashana
 4. Vishmashana
 5. Katu, tikta, and Kashaya rasa aahara sevana
 6. Ruksha, Laghu, and Shecta Aahara Sevana
- Mithya Vihara
 1. Excessive coitus and abnormal body posture.
 2. Vishama Santhana Shayana
 3. Ratrijagarana
 4. Bhaya, Shoka, and so on.
 5. Apadravya sevana involves introducing artificial objects into the vagina in an unsanitary manner, causing local resistance and facilitating the invasion of organisms, leading to infection.

This causes vitiation of Vata, specifically Apana Vata, which moves upward instead of downward, resulting in reverse diversion of Rajah and failure to expel it.

2) Pradushta artava

The term "artava" in this context refers to the ovum or reproductive hormones. This should be interpreted as vitiation of reproductive hormones since ovum is discussed separately under beeja dosha.

3) Beeja dosha

Beeja dosha causes abnormalities in artava and shukra, leading to abnormal genital tract formation in female fetuses, such as suchimukhi, resulting in kricchrtartava.

Genetic abnormalities that can result in functional abnormalities of the reproductive tract, particularly the uterus, and kulaja hetu are also associated.

Congenital anomalies in women, such as pinhole cervix, septate uterus, and imperforate hymen, can cause painful menstruation due to difficulty escaping blood.

4) Daiva

In cases where the cause is unknown, the disease is attributed to the woman's adharma and purvajanma krita papa karmas, causing her to suffer from curses.

Samprapti

Samprapti, also known as pathogenesis, refers to the disease's progression from causative factors to full manifestation. Proper disease manifestation, or samprapti, is crucial for effective disease treatment.

Samprapti of yonivyapada

It is noted that vata predominates in yonirogas manifestation along with other doshas and dushyas. For their respective reasons, charaka and vagbhat explained the samprapti of yonivyapadas as follows: first, the doshas become deranged and unite in yoni and garbhashaya, resulting in signs, symptoms, and complications.

Acharya sushruta states that when a man with abnormal genitalia engages in coitus with a young girl, a sick woman, or in an unfavorable position, the vata doshas becomes vitiated, reaches garbhashya, and, with the aid of the pitta and kapha doshas, produces yonivyapad.

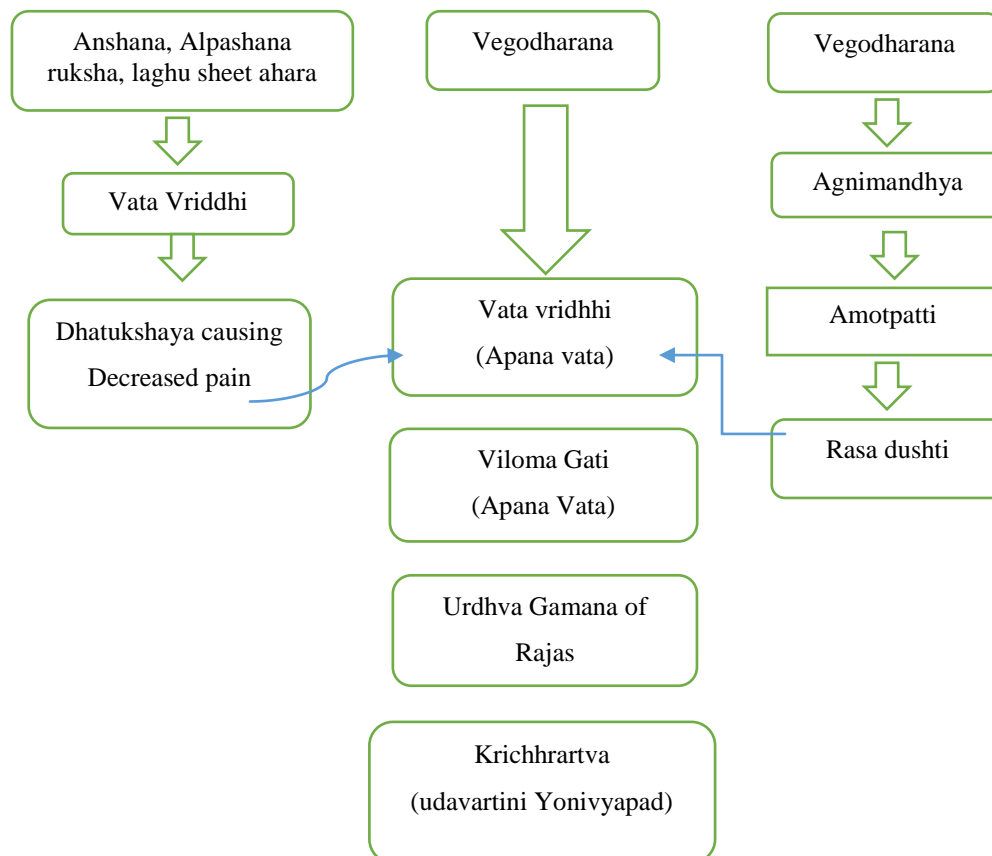
In Udavartini, Yonivyapad, Vegadharana causes vitiation of Vata, which moves upward (viloma gati) and fills the yoni, leading to prapedana. The rajah is initially thrown upwards before being discharged with difficulty, resulting in Kricchrtava.

Consuming Vata kara aahara vihara can aggravate Vata, resulting in Dhatukshaya and affecting the formation of Upadhatu.

Affects rasa dhatu formation and subsequent updhatu.

Artava production is reduced, leading to a weakened Vata dosha and painful menstruation. Atyashana causes agnimandya, which leads to amotpatti and rasa dushti, resulting in Vata vikruti. This disrupts normal Vata function and causes painful menstruation.

Samprapti



Samprapti Ghataka

- Doshas: Vata and Apana Vata
- Dushya: Rasa, Rakta, Mamsa, Artava
- Agni: Jatharagni. Dhatvagni mandya includes Rasa, Rakta, Artava, and Vaha srotas.
- Srotodushti - Vimarga gamana
- Roga marga - abhyantara
- Udbhava sthana - Amapakvashaya
- Sanchara sthana - Sarva shareera
- Vyaktasthana – Yoni

Rupa

The primary symptom is difficulty expelling the Rajah. Charaka describes the relief of symptoms once the flow begins, indicating primary dysmenorrhea. Sushruta lists the following symptoms of secondary dysmenorrhea: vata vedana, frothy menstrual blood, and difficulty in menstruation. The association of clots and Indu's explanation of Baddha Rajah can be connected.

Rupa	H.	SU.	A. S	A.H.	Y. R.	M. N.
Krichartava	+	+	+	+	+	+
Vimukta tatksanam sukham	+	-	-	-	-	-
Phenil raja	-	+	+	+	+	+
Vedana (garbhashaya)	+	+	-	-	+	+
Yoni prapidan	-	-	+	+	-	-
Kaphanaivam artava	-	-	-	-	-	+

Upadravas

Udavartini Yonivyapad refers to Yonivyapads that are explained by upadravas such as Vandhyatva, Gulma, Arshas, Pradara, and Vata disorders.

Sadhyasadyata

According to Acharya Sushruta, Yonivyapad that arises from the vitiation of a single dosha is sadhyasadyata. Thus, Udavartini Yonivyapad that arises from the vitiation of Vata is sadhya.

Chikitsa

"Samprapti Vighatanmeva Chikitsa"

Samanya and Vishesha are the two main sections that make up Udavartini Yonivyapad's Chikitsa.

^[4]This indicates that women cannot have Yonivyapad if Vata is not vitiated. Therefore, none of these 20 Yonivyapads can be treated if Vayu is not given proper consideration.

Yonivyapada should also receive the same treatment that is recommended for the following disorders.

- Shukra dosha
- Artava dosha
- Stana dosha
- Klaibya
- Mudha garbha
- Garbhini roga
- Garbhini paricharya
- Dushprajata roga chikitsa

Samanya Chikitsa Of Yonivyapads**^[4]Role of panchakarma in yonivyapada****1) Principles of treatment**

- Mridu snehana and swedana as a purvakarma followed by mridu vamanadishodhana.
- Use of Virechana is advised
- Milk is beneficial.

Basti

- Palasha Niruha basti
- Shatavryadi anuvasana basti
- Baladi yamaka Anuvasana basti

In addition to the standard medications and techniques for reducing vata, the drugs used for these procedures should be dosha-vitiated.

- Vataja disorders - sneha, sweda, vasti etc. Vatahara chikitsa.
- Pittaja disorders - raktapittahara, sheetakara chikitsa.
- Kaphaja disorders - ruksha, ushna karma.
- Sannipataja disorders - mix chikitsa according to doshik vitiation

^[4]Role of sthanik chikitsa

After proper shodhana karma, utara vasti, vasti, abhyanga, pralepa, pichu should be used

Pichu

- Mushaka kwatha sidhha tila taila pichu

Stabdha and karkasha yoni

- Application of veshavara.
- Anupa mamsa along with kumbhi sweda.
- Sudation with anupa, oudaka, mamsa mixed with vatahara aaushadhi kwatha.

Pichu holding a vatahara taila.

- Dhawana and purana with vatahara aaushadhi.

Osha, chosha yukta yoni

- sheetala and rakta pittahara chikitsa.

Durgandha, picchila yoni

- panchakashaya churana purana.
- prakshalana with kwatha.

Puyastrava yukta yoni

- Prakshalana with lavana mishrita gomutra.
- Yonipurana with shodhana dravya panda.
- Sugandhita dravya purana, prakshalana.

Kandu yukta yoni

- Yoni purana with kalaka. Varti containing gopitta and matsyapitta.
- Varti with madhu mishrita kinva.

2) Abhyantara aushadhi**Churna and Grita**

- Pushyanug churna
- Brihata shatavari ghrita
- Phala grita
- Triphladi ghrita

Kwatha

- Nyagrodhadi kwatha
- Maharasnadi kwatha

Modaka

- Jeerakadi modaka

Treatment of Vataja Yonivyapad

As Udavartini Yonivyapad occurs due to Vata vitiation so it is considered under Vataja Yonivyapads and hence samanya treatment for Vataja Yonivyapad can also be followed.

- Taila prepared with the drugs possessing ushna and snigdha guna should be used for parisheka, abhyanga and pichu.
- Kumbhi or nadi sweda either with mamsa rasa of audaka or aanupa animals or with milk mixed with tila and tandula or with Kwatha of drugs capable of suppressing the Vata should be done.

- Anoint the yoni with salt and oil and swedana should be done with any one out of ashma, prastara, shankara, pinda, nadi or kumbhi sweda.
- Pichu of the oil prepared with guduchi, malati, rasna, bala, madhuka, chitraka, nidigdhika, devadaru and yuthika.
- Kalka dharana of himsra.
- Guduchyadi taila uttara basti.
- Kashmaryadi ghrita paana
- Shatawaryadi ghrita paana.

Udavartini Yonivyapad chikitsa

The specific treatment aims at combating Vata dosha. As there is vigunta in Vata gati, the measures to do Vatanulomana are preferred.

- Snehana with trivrutasneha (ghrita, taila, vasa)
- Swedana with Mamsa rasa sevana of gramya, anupa and audaka animals
- Dashmoola ksheer basti
- Anuvasana basti and uttara basti with trivruttasneha
- Utkarika made with yava, godhum, kinva, kustha, shatapushpa, shatayahwa, priyangu, bala and akhuparni.
- Swedana with ksheer
- Oral use or use in the form of anuvasana and uttarabasti of sneha medicated with kwatha and kalka of dashamoola and trivruta.
- More use of sneha in diet and treatment modalities definitely combats morbid Vata dosha and helps in easy flow of artava.

Pathyas

- According to predominance of dosha; use of sura, arishta, asava, lashuna swarasa in early morning.
- Ksheer mamsayukta bhojana Yavanna bhojana, abhyarishta, sidhu, taila, pippali churana, pathya churana and lohabhasma with honey Bala taila, mishrakasneha and sukumarakasneha pana is considered congenial.
- Lashuna rasayana.

Apathyas

Manda prayoga is contraindicated.

^[4,11]**Vishesh chikitsa**

- Vatashamana chikitsa
- Dashamoola ksheera basti
- Anuvasana and uttar basti with traivrutta sneha
- Use of gramya, audaka, anupa mamsa rasa
- All other measures capable of suppressing vata

A number of yonivyapadas, including vatala, udavarta, pariplutha, and vataja arthava dushti, are known to cause dysmenorrhea.

Thus, the general guidelines for care provided by each acharya are as follows

For vataja yonivyapada, it is advised to use snehan, swedan, basti, vatavyadhihara karma, seka, abhyanga, pichu, etc. The subsequent treatment is also mentioned in addition to this.

-For artava shuddhi, five shodhana measures should be applied first, followed by frequent administration of uttarbasti, vamana, and virechana. Acharya charaka has explained the same but in mild form.

-Virechana is beneficial for yoni rogas and artava rogas.

-Menstrual disorders resulting from vata dosha should be treated with the specific medication prescribed to suppress that dosha. Recipes prescribed for yoni rogas and uttarbasti etc. Should also be used after giving due consideration to the vitiated dosha.

-Menstrual disorders caused by vata should be relieved by using luscious, hot, sour, and salty products. Sweet, cold and astringent substances for the purification of pitta and hot, dry and astringent for kapha.

- The recommended treatment for avrita apana vayu is agnideepaka, grahi, vatanuloman, and pakvashaya shuddhik.

Yoga Asanas Helpful During Menstrual Cycle

1. Swastikasana
2. Virasana
3. Padmasana
4. Gomukhasana
5. Paschimothasana
6. Badha-konasana

7. Janu sirasana - recommended to perform the asana without coming forward, keeping the back spine concave. This pose is calming. Lower abdominal and pelvic compression aids cramps.
8. Trikonasana
9. Ardha Chandrasana
10. Supported Setu Bandhasana - pose is calming, relieves menstrual discomfort Supta Vajrasana, Matsyasana
11. Shavasana
12. Pranayama: Ujjayi and Viloma pranayama

REFERENCES

1. Manusmriti with Manu Artha Mukta Vali Commentary of Kulluka Bhatta with Maniprabha Hindi Commentary by Pt. Haragovinda Shastri; by Pt. Gopala Shastri Nene.
2. Varanasi: Chaukhamba Surabharati Prakashana; 7th edition, 2001; 9/96: 478.
3. Sushruta Samhita Nibandhasangraha Commentary, Sutra sthana 14/6, by Jadavji Trikamji Acharya. Varanasi: Chaukhamba Surabharati Prakashana; 1st edition, 1994; 59.
4. Sushruta Samhita Nibandhasangraha Commentary, Sharira sthana 10/53, by Jadavji Trikamji Acharya. Varanasi: Chaukhamba Surabharati Prakashana; 1st edition, reprint, 1994; 392.
5. Charaka Samhita with Ayurveda-Dipika Commentary, Chikitsa sthana 30/25, 26, by Jadavji Trikamji Acharya. Varanasi: Chaukhamba Surabharati Prakashana; 1st edition, reprint, 2004; 635.
6. Sushruta Samhita of Sushruta with Nibandhasangraha Commentary, Sharira sthana 3/32, by Jadavji Trikamji Acharya. Varanasi: Chaukhamba Surabharati Prakashana; 1st edition, reprint, 1994; 274.
7. Ayurvediya Prasutitantra evum Stirog - 2nd part by Prof. K. M. Premvati Tiwari published by Chaukhamba Orientalia Varanasi, reprint on 2000, chapter- Yonivyapad Chikitsa, p.n.33,35
8. DC Dutta's textbook of gynaecology, including Contraception Enlarged & Revised Reprint of Sixth Edition, DC DUTTA, Edited by HIRALAL KONAR, Jaypee Brothers Medical Publishers (P) Ltd, chapter no. 13, Dysmenorrhea and Other Disorders of Menstrual Cycles, page no. 178-184.
9. Maharishi Sushruta: Sushruta Samhita, with commentary of Acharya Dalhanacharya, edited by Acharya yadavji Trikamji, Chaukhamba Sanskrita Sansthan Varanasi, 7th

- edition: reprint, 2010. 10. Agnivesha, Charaka Samhita revised by Charaka & Dridhabala, with Ayurveda Dipika commentary by Chakrapanidutta, foreword by Acharya Yadav ji Trikam ji, edition- Varanasi: Chaukhamba Surbharati prakushana, 2008.
10. Vagbhata, Ashtanga Sangraha, Vol. I, Translated by Prof. K.R.Srikantha Murthy, Chaukhamba Orientalia Varanasi, edition, 2009.
11. Vagbhata, Ashtangahrdaya with commentaries of Arundatta and Hemadri. edited by PL Hari Sadashiva Shastri Paradkar, Chaukhamba Sanskrit Sansthana, Varanasi, edition: reprint, 2010.
12. Shri Madhavakara, Madhavin Nidana, Madhukosh Vyakhya, edited by Prof. Yadunandana Upadhyaya, Chaukhamba Sanskrit sansthan, Varanasi, 29th.edition, 2000.
13. Shri Bhavamishra, Bhavaprakasha, edited by Pandit Shri Brahma Shankara Mishra, Part II, Chaukhamba Sanskrit bhavan. Yogaratnakara, with Vaidyaprablia Hindi commentary, by Dr. Indradev Tripathi and Dr. Daya Shankar Tripathi, Krishnadas Academy, Chaukhamba press, Varanasi, Ist edition, 1998.
14. Sharangdhara, Sharangdhara Samhita, translated by Dr. P. Himsagar Chandra Murthy, Chaukhamba Sanskrit Sansthana, Varanasi, edition, 2010.
15. Charak samhita, vd.yadavji trikamji acharya, chaukhambha publication, new delhi, reprint, 2017, sutrasthan 19/4, pageno.-110.153.
16. Sushrut samhita, p.v. Sharma, chaukhamba vishwabharati publication, reprint 2014, uttartantra 38/6-9, pageno.-308.