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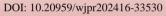
### AYURVEDIC PERSPECTIVE ON ARTAVA KSHAYA: A DETAILED **REVIEW**

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#### **ABSTRACT**

Artava Kshaya, a condition characterized by reduced menstrual flow, represents a significant aspect of female reproductive health in Ayurveda. The term "Artava" encompasses menstrual blood, ovum, hormones, and associated secretions, while "Kshaya" denotes reduction or cessation. According to classical texts, Artava Kshaya is a symptom observed in various menstrual disorders, including delayed and scanty menstruation, associated with pain and discomfort. This article provides a comprehensive review of Artava Kshaya from an Ayurvedic perspective, including its definition, etiology, pathogenesis, and treatment modalities. Acharya Sushruta defines Artava Kshaya as delayed or scanty menstrual bleeding due to Vata and Pitta dosha imbalances. Primary etiological factors include Apan Vayu vitiation, Dhatu imbalance, excessive hot foods, over-medication, and Nasya application. The pathogenesis involves a complex interplay of dosha

disturbances and dhatu deficiencies, impacting normal menstrual function. Treatment in Ayurveda focuses on both Samshodhana (purification) and Samshamana (pacification) approaches. Purification methods such as Vamana, Virechana, and Basti aim to restore dosha balance and improve menstrual flow, while pacification strategies include oral medications and dietary adjustments. Key formulations used include Raja Pravartani Vati and Phala Ghrita. Comparatively, modern conditions like oligomenorrhoea and hypomenorrhoea share similarities with Artava Kshaya, reflecting both physiological and hormonal imbalances. This review underscores the relevance of integrating Ayurvedic insights with contemporary medical practices to offer a holistic approach to managing menstrual disorders. By bridging traditional and modern perspectives, effective, personalized treatment strategies can be developed to enhance female reproductive health.

**KEYWORDS:** Artava Kshaya, Oligomenorrhoea, Hypomenorrhoea, Samshodhana, Samshamana.

#### INTRODUCTION

In Ayurveda, the term "Artava" encompasses a broad spectrum of female reproductive elements, including menstrual blood, ovum, hormones, and occasionally vaginal secretions post-intercourse. Various menstrual disorders are categorized under **Asta Artava Dusti**, **Asrgdhara**, and **Artava Kshaya** in classical texts. The term "Kshaya," derived from the Sanskrit root "All" (kshi), signifies reduction or cessation. Acharya Caraka equates "Kshaya" with "Hrasa" or "Nyunata." Therefore, when Artava is reduced from its normal flow, it is termed **Kshin Artava**. This reduction is not regarded as a standalone disease but a symptom observed in several disorders. Acharya Sushruta describes the characteristics of Artava Kshaya under **Dosa Dhatu Mala Kshaya Vriddhi Vignanam** in Sutrasthana and **Nastartava** in Sharirasthana.

#### **Definition (Nirukti)**

Acharya Sushruta defines Artava Kshaya as delayed or scanty menstrual bleeding associated with pain due to the involvement of Vata and Pitta Doshas.<sup>[1,2]</sup> Delayed menstruation refers to a cycle extending beyond one month, and scanty bleeding lasts for less than three days.<sup>[3]</sup>

#### Aetiology (Nidan)

The primary causes of all diseases in Ayurveda are imbalances in the three doshas: Vata, Pitta, and Kapha. These doshas, in singular or combined forms, when vitiated, lead to disease. Generalized causes of Artava Dushti (disorders of Artava) are:

- **1. Apan Vayu Dushti**: Apan Vayu is responsible for timely excretion of Artava. Its imbalance leads to delayed menstrual bleeding.<sup>[4]</sup> Suppression of Apan Vayu also causes its vitiation.<sup>[5]</sup>
- **2. Dhatu Imbalance**: Artava appears only in females with balanced Dhatus (Paripurna Dhatu). [6]
- **3. Excessive Ushna Quality Foods**: Consumption of excessively hot foods and beverages leads to vitiation of Artava.<sup>[7]</sup>

- **4. Excessive Medication**: Over-medication, especially in Mrdu Kosthi patients after Snehana (oleation) and Swedana (fomentation), leads to Artava Dushti. [8]
- **5. Application of Nasya**: Nasya (nasal administration of medicines) during menstruation can cause menstrual disorders. [9]

Other disorders related to Artava, such as Marga Avarodh of Artavavaha Srota<sup>[10]</sup>, Rakta Marga obstruction by Sleshma and Vata<sup>[11]</sup>, and Artava Srotas injury<sup>[12]</sup>, share similar etiologies and clinical features with Artava Kshaya.

#### **Purvarupa (Premonitory Symptoms)**

Classical texts do not explicitly mention Purvarupa for Artava Kshaya, but symptoms of **Rasa Dhatu Ksaya** (deficiency in the Rasa Dhatu) can be considered indicative. These include<sup>[13-15]</sup>:

- Inability to withstand normal sounds (Sabdaasahatva)
- Tachycardia (Hridaydrava)
- Tremors (Kampa)
- Emaciation (Sosha)
- Pain (Sula)
- Throbbing pulsations (Spandana)
- Exhaustion from minimal physical activity (Alpayapi ca chestayasrama)
- Chest pain (Hridpida)
- Thirst (Trisna)

#### Rupa (Symptoms)

- 1. Delayed Menstruation (Yathochitkala Adarshnam): Normal menstruation should occur monthly and last three days. In Artava Kshaya, the interval extends beyond one month, delaying the cycle. [16]
- **2. Scanty Menstrual Flow (Alpata)**: Both the quantity (Pramana) and duration (Avadhi) of menstrual flow are reduced from the normal 3-4 days and 4 Anjali Pramana.
- **3. Yoni Vedana (Pain in the Yoni)**: Scanty bleeding occurs with great difficulty, causing pain in the genital area.

#### **Cause of Pain**

Artava Kshaya causes increased Vayu, filling the space meant for Artava, leading to pain in the genital region.<sup>[17]</sup> Vata's involvement in Artava Kshaya results in pain characterized by

pricking (Toda) and tearing (Bheda) sensations. Vata's Ruksa (dry) and Khara (rough) qualities cause persistent pain throughout the bleeding period.<sup>[18]</sup>

#### Samprapti (Pathogenesis)

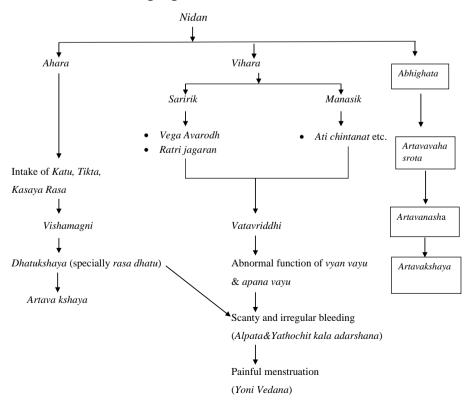
#### Normal menstruation results from

- **Dhatuparipurnata**: Proper nourishment and replenishment of all Dhatus.
- **Dosasamyata**: Balanced state of the Tridosha.
- Normal Srotas Functioning: Healthy Rasavaha, Raktavaha, and Artavavaha Srotas.

Acharya Sushruta attributes Artava Kshaya to Upadhatu Kshaya (sub-dhatu deficiency). Artava, being the Upadhatu of Rasa, is affected by any factor causing Rasavaha Srota Dushti, leading to abnormalities in Artava.<sup>[19]</sup>

- Dhatu Kshaya: Leads to Vata increase. Vata's Shita (cold) and Ruksa (dry) qualities
  hinder Artava formation by opposing its Agneya (fiery) and Picchila (sticky) properties.
  Apan Vayu's abnormal function causes scanty or delayed menstrual bleeding.
- Ranjak Pitta: Converts Rasa Dhatu into Rakta Dhatu, influencing menstrual blood formation. Abnormal Rakta Dhatu formation leads to Artava Dushti.
- **Tarpak Kapha**: Nourishes body tissues, including Artava. Excessive Vayu decreases Kapha's Kledan (moistening) and Snigdha (unctuous) properties, affecting Artava.

#### **Schematic Presentation of Samprapti**



#### Sampraptighatak

• **Nidan**: Guru (heavy), Shita (cold), Snigdhaahar (unctuous food), Vegavidharan (suppression of natural urges), Ratrijagaran (night waking).

• **Dosa**: Vata and Pitta

• Dushya: Rasa

• Srota: Rasavahasrota, Artavavahasrota

• **Srotadushti**: Sanga (obstruction)

• Adhisthana: Yoni

#### **Chikitsa (Treatment)**

Acharya Caraka defines Chikitsa as actions restoring the balance of Dhatus. The main objective in treating Artava Kshaya is **Samprapti Vighatana** (disrupting the pathogenesis), achieved through **Samshodhana** (purification) and **Samshamana** (pacification).

### Samshodhana (Purification)<sup>[20-22]</sup>

- **1. Vamana Karma (Therapeutic Emesis)**: Removes soumya dhatus, relatively increasing agneya constituents, thus enhancing Artava. [21]
- **2. Virechana (Purgation)**: Not recommended as it reduces Pitta, decreasing Artava. However, it may clear Urdhva (upper) and Adho (lower) Srotas when properly dosed. [21,22]
- **3. Basti** (**Enema**): Artava Kshaya is treatable by Basti. Anuvasana Basti (oil enema) and Uttara Basti (enema into the uterus) can be beneficial. [21]
- **4.** Nasya (Nasal Administration): Can be given with ginger juice (adrak swaras).

#### **Samshamana** (Pacification)

- **Oral Medication**: Medications that pacify the disease. Langhana Chikitsa (fasting or light diet) can be effective in minimal dosha conditions. [15]
- **Agneya Dravyas**: Use of hot potency substances. Matsya (fish), Kulattha (horse gram), Amla (sour substances), Tila (sesame), Masha (black gram), Sura (alcohol), Gomutra (cow urine), Dadhi (curd), Sukta (fermented preparations).<sup>[21]</sup>
- Pitta Vardhaka Dravyas: Substances increasing Pitta also help in enhancing Artava.

#### Formulations Used in Artava Kshaya

- 1. Raja Pravartani Vati
- 2. Chandra Prabha Vati

- 3. Kanya Lauhadi Vati
- 4. Rasa Pachaka Vati
- 5. Chitrakai Vati
- 6. Phala Ghrita
- 7. Brihat Shatayari Ghrita
- 8. Shita Kalyanaka Ghrita
- 9. Hingvastak Churna
- 10. Nasta Pushpantak Rasa
- 11. Praja Sthapana Yoga
- 12. Doshamularista
- 13. Kumaryasava
- 14. Adraka Asava
- 15. Shukumara Kashaya
- 16. Sapta Saram Kashaya

### Prognosis (Sadhya Asadhyata)<sup>[24-26]</sup>

There are conflicting views regarding the prognosis of Kshinartava (Artava Kshaya). Acharya Sushruta and Vagbhatt I consider it Asadhya (incurable), while Vagbhatt II in Astanga Hridaya classifies it as Sadhya (curable).

#### **Complications (Upadrava)**

- Acharya Sushruta mentions that women suffering from Artava Dushti will be unable to conceive.<sup>[27]</sup>
- Astanga Samgraha uses the term "Aveeja" (anovulation) as a complication of Artava Dushti. [28]

# $\label{eq:modern} \mbox{Modern Disease Review: Oligomenorrhoea and Hypomenorrhoea} \mbox{$^{[29,30,31]}$}$

#### Oligomenorrhoea

Oligomenorrhoea is defined as infrequent and irregular menstrual bleeding occurring at intervals longer than 35 days. While it can sometimes present without fertility impairment, medical attention is warranted if cycles become excessively erratic or infrequent. If untreated, oligomenorrhoea can progress to secondary amenorrhoea.

#### Aetiopathogenesis

#### I. Physiological Factors

- Adolescence: Following menarche, many adolescents experience anovulatory cycles leading to irregular menstruation due to the immature hypothalamic-pituitary-ovarian (HPO) axis.
- Climacteric: During this transitional phase, declining ovarian activity leads to irregularities as progesterone levels drop due to anovulation.

#### **II. Nutritional Factors**

- Malabsorption Syndromes: Chronic dietary deficiencies during childhood can result in permanent amenorrhoea, often referred to as alimentary castration.
- Starvation: Starvation during adulthood, such as during famines, can lead to oligomenorrhoea or amenorrhoea. Nutritional deficiencies, particularly protein, are critical in the production of gonadotrophins.
- Anorexia Nervosa: This psychological disorder commonly affects young women and leads to significant weight loss (25% of body weight), causing infrequent menstruation or amenorrhoea due to leptin deficiency and subsequent lack of GnRH secretion.
- **Bulimia Nervosa**: Characterized by episodes of binge eating followed by compensatory behaviors (e.g., vomiting), leading to weight fluctuations and increased depression, which can affect menstrual cycles.
- Obesity: Oligomenorrhoea is frequently seen in obese women due to increased aromatization of androgens to oestrone and reduced levels of sex hormone-binding globulin (SHBG).

#### **III. Hypothalamic Factors**

- **Disruption in GnRH Production:** Disturbances in the hypothalamus can interfere with GnRH production, affecting menstrual cycles.
- **Associated Symptoms**: Hypothalamic issues may also present with galactorrhoea and growth abnormalities.
- **Causes of Dysfunction:**
- **Infections and Injuries**: Such as encephalitis or meningitis.
- **Psychosocial Factors**: Stress, psychoses, and eating disorders impacting GnRH.
- **Drug-Induced**: Use of hormonal contraceptives, antidepressants, and antipsychotics affecting the HPO axis.

#### **IV. Pituitary Factors**

- **Tumors**: Pituitary adenomas can cause hyperprolactinaemia, leading to menstrual irregularities.
- **Sheehan's Syndrome**: Ischaemic necrosis of the pituitary post severe hemorrhage during childbirth.
- **Simmond's Disease**: Advanced stage of Sheehan's, characterized by extensive pituitary damage.
- **Empty Sella Syndrome**: Enlarged sella turcica filled with cerebrospinal fluid, resulting in hypopituitarism.
- Hyperprolactinaemia: Elevated prolactin levels disrupt GnRH secretion, leading to menstrual disturbances.

#### V. Ovarian Factors

- **Underproduction of Hormones**: Conditions like resistant ovarian syndrome and autoimmune disorders lead to inadequate ovarian response.
- **Primary Ovarian Insufficiency (POI)**: Defined as amenorrhoea for over four months with elevated FSH in women under 40.
- Continuous Hormone Production: Persistent secretion of oestrogen/progesterone from certain ovarian tumors can lead to amenorrhoea.
- Overproduction of Androgens: Conditions like Polycystic Ovary Syndrome (PCOS) can inhibit normal endometrial and follicular activity.

#### VI. Uterine Factors

 Acquired Obstruction: Conditions such as cervical stenosis and Asherman syndrome can cause oligomenorrhoea.

#### VII. Vaginal Factors

• **Scarring**: Trauma from childbirth or surgeries leading to vaginal atresia may cause menstrual irregularities.

#### **VIII. Endocrine Disorders**

- **Thyroid Disorders**: Thyroid dysfunction can significantly impact menstrual cycles due to the interaction of TRH and prolactin.
- Pancreatic Disorders: Diabetes can lead to menstrual irregularities if poorly controlled.

Adrenal Disorders: Cushing's syndrome and adrenal tumors can affect menstrual function.

#### IX. Other Causes

- Renal Failure and Cirrhosis: Both conditions can lead to oligomenorrhoea due to prolactin level changes.
- **Idiopathic Causes**: Cases without identifiable causes.

#### **Evaluation**

- Clinical History and Examination: The initial step in diagnosing oligomenorrhoea.
- Avoiding Unnecessary Investigations: Particularly in older patients unless clear reasons exist for amenorrhoea.
- **Investigation Necessity**: Cessation of menstruation without a clear cause warrants thorough investigation.

#### **Investigations**

- 1. **Pregnancy Test**: Essential to exclude pregnancy before further tests.
- 2. Serum Prolactin Levels: Evaluated for hyperprolactinaemia, with normal levels being <25 ng/ml.
- 3. Serum FSH and LH Levels: Helps determine the nature of amenorrhoea (hypergonadotropic, hypogonadotropic).
- **4. Assessment of Oestrogen Status**: Low oestradiol levels indicate hypoestrogenism.
- **5. Serum TSH Levels**: Evaluates thyroid function.
- **6.** Anti-Müllerian Hormone (AMH): Indicates ovarian reserve.
- 7. Transvaginal Ultrasound: Assesses endometrial thickness and ovarian morphology.

#### Management

- **General Treatment Approach:** Similar to amenorrhoea with a generally better prognosis.
- Addressing Nutritional and Stress Factors: Corrections in diet and lifestyle are crucial.
- Weight Management: Important in cases of obesity, where weight loss can restore menstrual function.
- **Hormone Therapy**: Cyclical oestrogen and progesterone may be used cautiously to assess uterine response.

- **Ovulation Induction**: For patients seeking conception, gonadotrophin therapy may be necessary.
- Surgical Interventions: Such as laparoscopic ovarian drilling for PCOS or transsphenoidal surgery for prolactinomas.

#### Hypomenorrhoea

Hypomenorrhoea is characterized by menstrual periods lasting only 1-2 days or scanty bleeding. It is often a precursor to amenorrhoea and shares many underlying causes.

#### **Aetiopathogenesis**

#### I. Constitutional Factors

• **Normal Variation**: In some women, scanty menstruation may simply be a constitutional trait without clinical significance.

#### **II. Psychological Factors**

• **Impact on Flow**: Psychological factors can lead to reduced menstrual flow without complete cessation.

#### **III. Uterine Factors**

- Endometrial Surface Reduction: Limited endometrial area for shedding can cause scanty bleeding.
- Asherman's Syndrome: Intrauterine adhesions lead to a reduced capacity for normal
  menstrual shedding. Causes include surgical trauma, infections, and certain procedures
  (e.g., curettage). Diagnosis involves hysteroscopy or imaging techniques, with
  hysteroscopic resection being the primary treatment to restore fertility.

#### **DISCUSSION**

Artava Kshaya, understood in Ayurveda as the reduction or cessation of normal menstrual flow, offers a comprehensive perspective on menstrual disorders, correlating closely with modern concepts of oligomenorrhoea and hypomenorrhoea. The Ayurvedic approach emphasizes the balance of doshas—Vata, Pitta, and Kapha—along with the proper functioning of dhatus (body tissues) and srotas (channels). Imbalances in these fundamental components lead to various reproductive and menstrual disorders.

Artava Kshaya is primarily linked to the disturbance in Apan Vayu, responsible for the downward movement and expulsion of menstrual blood. Factors such as improper diet,

lifestyle, excessive medication, and suppression of natural urges contribute to this imbalance. The condition manifests through delayed menstruation, scanty menstrual flow, and pain due to the involvement of Vata and Pitta doshas. These symptoms reflect the broader Ayurvedic principle that health is maintained through the equilibrium of bodily elements and any disruption leads to disease.

From a modern medical perspective, Artava Kshaya aligns with conditions like oligomenorrhoea and hypomenorrhoea. These disorders are often caused by hormonal imbalances, nutritional deficiencies, and physiological or psychological stress. The understanding of these conditions in modern medicine involves detailed evaluations of the hypothalamic-pituitary-ovarian axis, nutritional status, and endocrine functions.

The Ayurvedic treatment for Artava Kshaya involves both purification (Samshodhana) and pacification (Samshamana) therapies. Purification therapies like Vamana (therapeutic emesis) and Basti (enema) aim to restore the balance of doshas, while pacification therapies involve dietary modifications and herbal formulations to support reproductive health. Notable formulations include Raja Pravartani Vati and Phala Ghrita, which are designed to regulate menstrual cycles and enhance reproductive health.

By combining the holistic principles of Ayurveda with modern medical insights, a more integrative approach can be developed for managing menstrual disorders. This synergy can offer personalized treatment strategies that address both the physiological and psychological aspects of menstrual health, ensuring comprehensive care for women suffering from Artava Kshaya and related conditions.

#### **CONCLUSION**

- Artava Kshaya, or the reduction in menstrual flow, provides a profound example of how ancient Ayurvedic principles align with contemporary medical understanding. Through an intricate balance of doshas and dhatus, Ayurveda offers a holistic view of female reproductive health, correlating closely with modern menstrual disorders such as oligomenorrhoea and hypomenorrhoea. The Ayurvedic perspective emphasizes the importance of maintaining equilibrium within the body, highlighting the critical role of Apan Vayu in the timely and adequate excretion of menstrual blood.
- The etiology of Artava Kshaya underscores the multifaceted nature of menstrual health, attributing disorders to dietary habits, lifestyle choices, excessive medication, and the

- suppression of natural urges. These factors lead to the vitiation of Vata and Pitta doshas, resulting in delayed and scanty menstruation accompanied by pain. This Ayurvedic understanding parallels modern insights into the hormonal and physiological imbalances that cause menstrual irregularities.
- Treatment strategies in Ayurveda for Artava Kshaya encompass both purification and pacification techniques. Purification methods like Vamana and Basti aim to cleanse the body and restore doshic balance, while pacification therapies involve the use of specific herbal formulations and dietary adjustments to support and normalize menstrual function. Notable Ayurvedic formulations such as Raja Pravartani Vati and Phala Ghrita are tailored to regulate menstrual cycles and enhance reproductive health.
- The synthesis of Ayurvedic principles with modern medical approaches presents an integrative pathway to managing menstrual disorders. This dual approach can offer personalized and holistic care, addressing both the physiological and psychological dimensions of menstrual health. By recognizing the strengths of both systems, healthcare providers can develop comprehensive treatment strategies that cater to the unique needs of women experiencing Artava Kshaya and related conditions, ultimately improving their quality of life and reproductive well-being.
- In conclusion, the Ayurvedic perspective on Artava Kshaya not only enriches our understanding of menstrual health but also provides valuable therapeutic options that complement modern medical practices, fostering a more integrative and holistic approach to women's health.

#### REFERENCEE

- 1. Vaidya HP, Varanasi: Chaukhambha Orientalia; Ashtanaga Sanghara of Vagbhata, Sharir Sthana Reprint, 2005; 1/24.
- 2. Vaidya HP, Varanasi: Chaukhambha Orientalia; Ashtanaga Hridayam of Vagbhata, Sharira Sthana Reprint, 2005; 1/11.
- 3. Sharma PV, Varanasi: Chaukhambha Orientalia; 2007. Susruta Samhita of Susruta, Sutra Sthana, 2007; 15/12, Dalhan Tika.
- 4. Sharma PV, Varanasi: Chaukhambha Orientalia; 2007. Susruta Samhita of Susruta, Nidan Sthana, 2007; 1/19.
- 5. Acharya YT, editor. Reprint Edition. Varanasi: Chaukambha Sanskrit Sansthan; Charaka Samhita of Agnivesha, Sutra Sthana, 2004; 7/12.

- 6. Dr P Srinivasa Rao: Chaukhambha Krishnadas Academy. Bhela Samhita, Sharir Sthana, 5/6.
- 7. P. V. Tiwari: Chaukhambha Orientalia; Kashyap Samhita. Kalpa Sthana, 7/32.
- 8. P. V. Tiwari: Chaukhambha Orientalia; Kashyap Samhita, Siddhi Sthana. 3/20.
- 9. P. V. Tiwari: Chaukhambha Orientalia; Kashyap Samhita, Siddhi sthana. 4/46.
- 10. Sharma PV, Varanasi: Chaukhambha Orientalia; 2007. Susruta Samhita of Sharir, Sutra Sthana, 2007; 2/21.
- 11. Vaidya HP, Varanasi: Chaukhambha Orientalia; Ashtanaga Sanghara of Vagbhata, Sharir Sthana Reprint, 2005; 1/13, indu tika.
- 12. Sharma PV, Varanasi: Chaukhambha Orientalia; 2007. Susruta Samhita of Sharir, Sutra Sthana, 2007; 9/12.
- 13. Sharma PV, Varanasi: Chaukhambha Orientalia; 2007. Susruta Samhita of Susruta, Sutra Sthana, 2007; 17/64.
- 14. Vaidya HP, Varanasi: Chaukhambha Orientalia; Ashtanaga Sanghara of Vagbhata, Sutra Sthana Reprint, 2005; 19/10.
- 15. Sharma PV, Varanasi: Chaukhambha Orientalia; 2007. Susruta Samhita of Sharir, Sutra Sthana, 2007; 15/9.
- 16. Vaidya HP, Varanasi: Chaukhambha Orientalia; Ashtanaga Sanghara of Vagbhata, Sharir Sthana Reprint, 2005; 1/17.
- 17. Sharma PV, Varanasi: Chaukhambha Orientalia; 2007. Susruta Samhita of Sharir, Sutra Sthana, 2007; 15/12- Chakrapani.
- 18. Sharma PV, Varanasi: Chaukhambha Orientalia; 2007. Susruta Samhita of Sharir, Sutra Sthana, 2007; 17/7.
- 19. Acharya YT, editor. Reprint Edition. Varanasi: Chaukambha Sanskrit Sansthan; Charaka Samhita of Agnivesha, Viman Sthana, 2004; 5/13.
- 20. Sharma PV, Varanasi: Chaukhambha Orientalia; 2007. Susruta Samhita of Sharir, Sutra Sthana, 2007; 15/12.
- 21. Sharma PV, Varanasi: Chaukhambha Orientalia; 2007. Susruta Samhita of Susruta, Sutra Sthana, 2007; 15/12, Dalhan Tika.
- 22. Sharma PV, Varanasi: Chaukhambha Orientalia; 2007. Susruta Samhita of Sharir, Sutra Sthana, 2007; 15/12- Chakrapani.
- 23. Astangahrdayam composed by Vagbhata with the Commentaries (Sarvangasundari) of Arunadutta Introduced by Prof. P. V. Sharma. Reprint 9<sup>th</sup> edition 2005, Published by Chaukhambha Orientalia Varanasi, 956: 270-271.

- 24. Sharma PV, Varanasi: Chaukhambha Orientalia; 2007. Susruta Samhita of Sharir, Sutra Sthana, 2007; 2/5.
- 25. Vaidya HP, Varanasi: Chaukhambha Orientalia; Ashtanaga Sanghara of Vagbhata, Sharir Sthana Reprint, 2005; 1/25.
- 26. Vaidya HP, Varanasi: Chaukhambha Orientalia; Ashtanaga Sanghara of Vagbhata, Sharir Sthana Reprint, 2005; 1/12.
- 27. Sharma PV, Varanasi: Chaukhambha Orientalia; 2007. Susruta Samhita of Sharir, Sutra Sthana, 2007; 2/3.
- 28. Vaidya HP, Varanasi: Chaukhambha Orientalia; Ashtanaga Sanghara of Vagbhata, Sharir Sthana Reprint, 2005; 1/23.
- 29. F. gary Cunningham; Williams Gynaecology, 26e.
- 30. Jonathan S. Berek: Berek & Novak's Gynaecology, 16e.
- 31. Hiralal Konar: DC Dutta's Textbook of Gynaecology.