

# WORLD JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.wjpmr.com

<u>Review Article</u> ISSN 2455-3301 WJPMR

# A LITERARY REVIEW ON KSHARA PATAN IN THE MANAGEMENT OF ARSHA: AN AYURVEDIC PERSPECTIVE

## Pankaj Vishwakarma<sup>1</sup>\*, Mrigank Shekhar<sup>2</sup> and Anubha Srivastava<sup>3</sup>

<sup>1</sup>PG Scholar Deptt. of Shalya Tantra Govt. Ayurved P.G College and Hospital Varanasi. <sup>2</sup>Lecturer Dept. of Shalya tantra Govt. Ayurved P.G College and Hospital Varanasi. <sup>3</sup>Assistant professor, Dept. of Rachna sharir Govt. Ayurved P.G College and Hospital Varanasi.



\*Corresponding Author: Pankaj Vishwakarma

PG Scholar Deptt. of Shalya Tantra Govt. Ayurved P.G College and Hospital Varanasi.

Article Received on 19/12/2024

Article Revised on 09/01/2025

Article Accepted on 29/01/2025

### ABSTRACT

Arsha (haemorrhoid) is known to mankind as a common ano-rectal disease. According to Ayurveda Mithya aaharvihara i.e., unhealthy lifestyle is one of the major aetiological factor of Arsha and it is unavoidable in this busy modern lifestyle due to junk food habits and lack of time. This habit causes vitiation of Doshas which affect digestive fire (Mandagni) and cause constipation. Hence constipation is one of the major causes for haemorrhoid. It is also known as "Mahagadas" which means difficult to cure. Apamarga (*Achyranthes aspera*) is a significant herb in Ayurvedic medicine, often used for its various therapeutic properties In Ayurveda, Apamarga is classified as a potent herb for balancing the doshas, particularly Kapha and Vata. It has several properties that make it effective in managing haemorrhoids. There are certain methods of kshara karma. One of them is Kshara patan method which has been proved very effective in the treatment of different types of haemorrhoids is being practiced widely. This effectiveness of Kshara patan can be attributed only to the potency of the particular content, i.e., kshara. Accordingly, the Apamarga (*Achyranthus aspera Linn.*) kshara is said to be very useful in treating the haemorrhoids locally.

KEYWORDS: Arsha, Hemorrhoid, Apamarga, Kshara patan, Bheshaj chikitsa, Ano-rectal, Mandagni.

## INTRODUCTION

Ayurveda is an traditional system of medicine that originated in India more than 5,000 years ago. The word "Ayurveda" comes from Sanskrit, where "Ayu" means life and "Veda" means knowledge or science, thus translating to the "science of life." It is a holistic approach to health that emphasizes balance in the body, mind, and spirit. In Ayurveda, it is believed that each individual is composed of three primary energies or "doshas"- Vata, Pitta, and Kapha. These doshas represent different combinations of the five elements (Earth, water, fire, air) and govern various physiological and psychological functions.Vata: Associated with air and governs movement, communication, and creativity. Pitta: Associated with fire and water which governs digestion, metabolism, and transformation. Kapha: Associated with earth and water which governs structure, stability, and immunity.

The Shalya tantra is the main branch of Astanga Ayurveda, contains many aspects of current surgical principles. Sushruta elaborated advances of Shalya tantra in many Ano-rectal disorders, including Arsha. The name 'Arsha' is derived from "Ru-Gatau" Dhatu, and the

suffix "Asun" means "as violent as an enemy."All Ayurvedic classics state that the current sedentary lifestyle, irregular food habits, eating junk foods, spicy, non-fibrous foods, inactive occupation and mental stress, among other things, are causative factors for 'Arsha' (Haemorrhoid), which leads to dysfunction of digestive enzymes, which in turn leads to constipation, itching, burning sensation, and pain in the region of Guda, and eventually bleeds, resulting in Arsharoga. Acharyas defined numerous Chikitsa modalities of Arsha critically for prevention and cure, as well as avoiding causal factors. Depending on the type and extent of pile mass, the modern treatment system has incorporated a number of techniques, such as Sclerotherapy (injecting a sclerosent agent into the submucous spaces of haemorrhoids), Rubber band ligation, Infra red coagulation (IRC), Cryosurgery (using N2O gas), Hemorrhoidectomy,<sup>[1]</sup> etc. However, each of these methods has advantages and disadvantages as well as limitations.

According to the available Arsha treatment modalities, the Kshara karma modality is the best one, considering its convenience, ease of adoption, cost-effectiveness and

curative results. In this para-surgical approach, various sorts of external kshara application are employed to treat the arsha. These include Ksharasutra Ligation (KSL), Ksharpatan, and so on. Kshara sutra ligation is a surgical treatment, whereas ksharapatan vidhi is a locally applied technique that appears to be successful and simple to perform. Several studies of ksharapatan have been undertaken; thus, it is time to specify the study of ksharapatan, for example, according to the degree of pile mass and other symptoms.

Kshara chikitsa has been in used since 500 B.C. According to Sushruta, kshara is made from 22 plants, including Achyranthus aspera,<sup>[2]</sup> Euphorbia nerifolia, Cassia fistula, Holarrhena antidysentrica,<sup>[3]</sup> Adhatoda vasica, Calotropis giganteo, and Sesamum indicum. There are two types of kshara preparation: paniya kshara for internal usage, and pratisaraniya kshara for external usage. The pratisaraniya kshara is further classified into three types: mridu (mild activity), madhyam (Moderate action), and tikshna.<sup>[4]</sup> In this study, tikshna kshara was considered for local use directly on the Arsha.

Acharya Sushruta described Kshara as a medicinal tool known as an Anushastra. This approach is effective for treating wounds (Vrana), including non-healing wounds (Dushta Vrana), fistula in ano (Bhagandara), haemorrhoids (Arsha) and dermatitis (Charmakeela). Apamarga was one of the elements in Acharya Sushruta's list for Kshara preparation.<sup>[5]</sup>

**Arsha nidana:-** Charaka has described specific etiological factors.<sup>[6]</sup>

**Vataj arsha** -Astringent, pungent, Bitter, dry, cold and light articles of diet, measured and scanty eating, indulgence, strong wines and sexual intercourse, starvation, cold climate and season, excessive physical activity, grief, undue exposure to wind and sun.

**Pittaj arsha** -Pungent, acid, salt and alkaline articles of diet, excessive physical exercise, exposure to the heat or fire or the sun; hot climate or season, anger; drinking

**Kaphaj arsha**-Sweet, cold, salt, acid and heavy articles of diet, lack of exercise, day sleep, excessive addiction, sitting and Lying exposure to easterly-Mindy cold climate of Season, mental inactivity.

# Arsha symptoms<sup>[7]</sup>

**Vataj arsha**-Pile masses are dry, slight red or of many colors. irregular in their middle, resembles flower of kadamba and tundikeri, nadi, mukula (Flower bud) or suchi mukha (Eye of the needles) in shape; person suffering by these. expels hard faeces with pain, feels pain in the waist, back, flanks penis, anus and area of the umbilicus: he becomes a patient of abdominal tumor, prostate enlargement and splenomegally because of this (Piles) only: his skin, nails. eyes, teeth, mouth, urine and faeces all become black.

L

**Pittaj arsha** -Pile masses are blue at their tip, thin, spreading, yellowish or similar to liver (Gin colour); resemble the tongue of the parrot in shape, bulged in the middle like barley or the mouth of the leech and exuding fluid; the patient suffering from this, expels liquid faeces mixed with blood, fever, burning sensation, severe thirst and fainting develop as complications his skin, nail, eyes, teeth, mouth, urine and faeces become yellow.

Kaphaj arsha - Pile masses are white in colour,deep rooted, stable (Immovable), round, unctuous, pale, resemble karira, panasaasthi gosthana, do not burst nor exude fluids, and have severe itching, suffering from this, the person has diarrhoea with faeces mixed with kapha large in guantity, resembling mutton wash, swelling, cold fever (with chills), loss of taste, improper digestion and heavyness of the head develop only because of this, his skin, nails, eyes, teeth, mouth, urine and faeces all become white.

**Sannipataj arsha** - Piles produced by all the three doshas together, will have symptoms of all the doshas Simultaneously.

**Raktaj arsha** - In that produced by rakta (Blood) pile masses, resemble the sprouts (leaf bud) of nyagrodha, coral, kakanantika phala (Gunja) and have features of pitta, when the faeces becomes hard, then he expels faeces along with large quantity of vitiated blood suddenly, when this bleeding becomes too much the person develops complications/secondary diseases arising from too much loss of blood.

**Sahaja**-(Congenital) is due to the vitiation of blood (Menstrual blood or ovum) and semen. It should be treated according to the doshas only. It (Pile masses) especially are difficult to see (Deep inside), course, dark brown in colour, troublesome and bent inward, afflicted by this the person is emaciated, eats very little food, network of veins are visible prominently all over the body has less children and semen, has feeble voice and is always angry, has poor digestion and strength and is very lazy; is a victim of diseases feeing of coating in the region of the heart, loss of taste etc. of nose. head eyes, nose and ears, suffers from intestinal gurgling, flatulence.

### Arsha chikitsa<sup>[8]</sup>

In Ayurveda the basic principle of There are many preparations which are to management for every disease is to avoid the be applied locally. Most of these preparations are etiological factors that help in Samprapti vighatana (breaking of etiopathogenesis). Acharya Sushruta has described four dimensions of the treatment for Arsha.

चतुर्विधोडर्शसां साधनोपायः तद्यथा-भेषजं क्षारोअग्निः शस्त्रमिति ।तत्र, अचिरकालजातान्यल्पदोषलिङ्गोपद्रवाणि भेषजसाध्यानि, मृदुप्रसृतावगाढान्युच्छितानि क्षारेण, कर्कशस्थिरपृथुकठिनान्यग्निना, तनुमूलान्युच्छितानि कलेदवन्ति च शस्त्रेण । त्र भेषजसाध्यानामर्शसाम**द्श्या**नां च भेषजं भवति, क्षाराग्रिशससाध्यानां तु विधानमूच्यमानमृपधारय ।।

Arhas chikitsopaya-methods of treatment of haemorrhoids are four; such as bhesaja (use of medicines), Kshara (use of caustic alkalies), Agni (use of fire/ branding) and Shastra (use of sharp instruments/ surgery). Haemorhoids which are not chronic, having mild aggravation of doshas, symptoms and complications (secondary diseases) are treatable with medicines. Those which are soft, broad, deep and bulged up are to be treated with kshara (alkaline cautery). Those which are rough, immovable, big and hard require the use of fire (thermal cautery) Those which have thin root, bulged up and exuding (fluids) are to be treated with sharp instruments (surgery).

### Kshara

The term Kshara is derived from two root words, '**ATUTATE**', which means Shlathan or destroyer, due to its ability to eliminate substances such as diseased body tissue and vitiated flesh, among others. In Amarkosh, the phrase Kshar is known as donated Kach. This describes the meaning of movements (Sanchalan). In Sabdkalpadruma, "Kshar" is derived from "Dhatu Kshara," which means movement (Sanchalan).

Analyzing the derivation, the word kshara means spandan, Hinsa, and Ksharan.Kshara's fundamental meaning translates to violence that cuts or destroys the skin, tissues, and other body parts. In Sushrut Samhita, the substance that expels the "Dushta Tvak Mamsadi" via its Ksharan activity is called Kshara.<sup>[9]</sup>

Dalhana comments that the substance which produces Shodhana of Doshas, Dhatu, Maladi by its Ksharana action is called Kshara. Due to its corrosive nature (Ksharanata) it is known as Kshar (alkali). Kshara is having many Rasas and is dominated by katu followed by Lavan as Anurasa<sup>[10]</sup>-)

नानौषधिसमवायालितरोषधंन शुक्लत्वात् सौम्यः तस्य सौम्यस्यापि सतो दहनपचनदारणा-- दिशक्तिरविरूद्धा, आगृनेयौषधिगुणभ्रूथिष्टत्वात कटुक उष्णस्तीक्ष्ण पाचनो विलयनः शोधनो रोपणः शोषणः स्तम्भ्रनो लेखनः कृम्यामकफकुष्टविषमेदसामृपहन्ता प्ंसत्वस्य चातिसेवितः'''।[11]

According to Sushruta, Ksharas are Tridoshahara (alleviating three Doshas), Saumya (gentle), Pachaka (digestive), Ushnavirya (hot in potency), Tikshna (sharp), Vilayaka (liuefier of granular tissues), Shodhaka (purifier), Ropana (healing tissue), Shoshana (absorbent), Lekhana (scraping), Krimighna (destroying microorganism), Amahara (alleviating Kapha Dosha), Kustaghna (curing disease Kustha), Medohara (alleviating meda variety of fatty substances), Pumsatvahara (destroying sexual potency on prolong administration)<sup>[14]</sup>

Kshara's therapy is technically known as Kshara Karma and falls under the purview of Shalya Tantra, although Acharya Charaka considers it to be one of the threefold treatments, i.e. Shastra Pranidhana. Kshara Karma is one of the eight major methods of treatment according to Harita Samhita. Sushrut has described Kshara as an Anu Shastra, Upayantra, and one of Vrana's Upakramas. Sushruta underlines that when Kshara is administered by an uneducated physician, it can hurt the body like Agni, Shastra, and Vajra, or even cause death.

# Pratisarneeya Kshara is divided into three types based on its potency

- 1. Mridu (Mild), which requires no extra drugs and has a light action.
- 2. Madhyama (Moderate) includes A vapa Dravyas with a moderate action potential.
- 3. Teekshna (Acute) contains A vapa, Prativapa, and several other Dravyas, which make the Kshara more strong in action.

This classification is entirely dependent on the strength or concentration of Kshara for external application. This entails achieving cauterization at various depths within the application site.

### On the basis of origin

- 1. Vanaspatija
- 2. Pranija
- 3. Khanija.

Almost all classics stated that Ksharas should be utilized externally or internally depending on the symptoms of the body. Kshara is said to be the **most effective** of all surgical and para-surgical procedures in Ayurveda, शास्त्रानुशसभ्यः क्षारः प्रधानतमः, छद्य भेद्य लेख्य करणात्, त्रिदोषध्नत्वात विशेषक्रियाउवचारणाच्य ॥(Su.su 11/3)

While commenting on the passage, Dalhana clarifies that Chhedana, Bhedana, and others do not fall under the purview of Agni Karma or Jalaukavacharan, however Kshara does. Similarly, Arundutta, an Ashtang Hriday commentator, adds that Kshara is easily applicable and produces results even when Agnikarma and Shastra Karmas are contraindicated or difficult to conduct in specific ailments.

### Kshara guna

नैवातितीक्षणो न मृद्ः शुक्लः श्लक्षणोडथ पिळ्छिल.। अविष्यन्दी शिवः शीघ्रः क्षारो हृष्टगृण: स्मृतः ॥ (Su.su 11/18)

- 1. Na ati teekshna (not too strong)
- 2. Na ati mrudu (not too mild)
- 3. Na ati shukla (not too white)
- 4. Shlakshna
- 5. Pichchhila
- 6. Avishyandi
- 7. Sheeghra (quick acting)
- 8. Shiva

### Kshara doshas

अतिमार्दवश्वैत्यौष्णयत्वैक्षणष्यपैच्छिल्य सर्पिताः सान्द्रताउपक्वता हीन द्रव्यता दाष उच्यते 11 (Su.su 11/19)

- 1. Atimridu
- 2. Atishweta
- 3. Atiushnata
- 4. Atitikshnata
- 5. Atipichchhila
- 6. Ativisarpita

- 7. Atisandrata
- 8. Apakvata

#### Apamarga drug review



- 9. Heena dravyata
- 10. Atitanu



Botanical name	Achyranthus aspera
Family	Amaranthaceae
Rasa (Taste)	Katu, tikta
Guna (Properties)	Laghu, tikshna
Virya (Potency)	Ushna
Vipaka (Taste after digestion)	Katu
Dosha karma(action)	Pacify kapha and vata

# Chemical constituents of apamarga<sup>[12]</sup>

The ethanolic extract of the plant contains alkaloids and saponins'8, The shoot yielded a new aliphatic dihydroxyketone, characterized 36,47 as dihydroxyhenpentacontan-4-one together with ritriacontanol. The root was found to be contained oleanolic acid as the aglycone from the saponin fraction. Karma-Deepana, Kaphahara, Vatahara, Pachana, Vamaka, Adhovirecana, Medohara, Chedana, Part used-Whole plant

Dose-20-50 g. of the drug for decoction

**Varieties:-** In general, there are two ways that Apamarga is defined in Nighantu (Ayurvedic Lexicons).

- 1. Shweta (White variety)
- 2. Rakta (Red variety)

# But in Kaideva Nighantu, 3 varieties of Apamarga are mentioned

- 1. Apamarga (White variety)
- 2. Raktapamarga (Red variety)
- 3. Toyapamarga (Blue variety)

In addition, Raaj Nighantu has listed three variants that differ somewhat from Kaidev Nighantu, including

- 1. The Apamarga
- 2. Kartapamarga
- 3. Kshudrapamarga

# History of apamarga in samhita kala<sup>[13,14,15,16]</sup>

Charaka Samhita-Krimighna, Vamanopaga, Sirovirecanopaga Susruta Samhita-Varunadi gana, Viratarvadi gana,

Arkadi gana, Kakolyadi gana Astanga Samgraha-Sodhanadi gana, Tikta Skanda Astanga Hridaya-Tiktavarga

### Pharmacological effects of apamarga kshara<sup>[17]</sup>

L

Digestive system	Improves digestion, stimulates digestive fire (agni), enhances appetite, and treats	
	digestive disorders like indigestion, bloating, and gas.	
Anti- inflammatory	Alleviates inflammation in various parts of the body, useful in conditions like	
	arthritis and inflammatory bowel diseases.	
Antimicrobial	Combats bacterial and fungal infections, particularly relevant in treating	
	infections of the digestive and urinary tracts.	
Diuretic	Promotes urine production, aids in the elimination of toxins from the body,	
	beneficial in urinary tract infections and kidney stones.	
Antihelmintic	Expels intestinal worms, used to treat worm infestations in the digestive	
	system.Astringent Tones tissues, controls bleeding, useful in conditions like	
	bleeding piles (haemorrhoids) and dysentery.	
Antioxidant	Neutralises harmful free radicals, protects against oxidative stress-related damage	

L

### Preparation of apamarga kshara

Collection of Apamarga, preparation of Apamarga ash and vessel for Kshara nirmana. (a) A fully matured fresh Apamarga plant. (b) Drying of Apamarga Panchanga under sunlight. (c) Ignited of dried Panchanga in a big iron pan. (d) Completely burnt Panchanga. (e) Collection of prepared ash. (f) Specially designed vessel for Kshara preparation Apamarga kshara is traditionally prepared.<sup>[18]</sup> The entire process was broken into three sections.

Ash preparation involved collecting mature Apamarga Panchanga and drying it for 8 days in sunshine. After removing physical impurities, dried Panchanga was torched in a large iron pan. Following self- cooling, white ashes were obtained.

### Preparation of ksharajala

In a specially made steel vessel, one portion of ash was collected, and water was added four times. After carefully mashing the ingredients with hands, they were left undisturbed for three hours. Following that, the liquid layers of the clear supernatant were gathered via the outflow and filtered through three layers of cotton fabric. After mashing the remaining ash once again with six liters of drinkable water and leaving it alone for three hours, the second filtrate was collected. For the third time, the same procedure was used to gather the third filtrate.

### Preparation of kshara

All three filtrates (of Ksharajala) were individually treated to heat to evaporate the water content and yield Kshara, and by using this process; Kshara was made..

### Kshara patan vidhi

### Purva karma (Pre operative)

After obtaining written informed consent, the perianal area was painted with antiseptic solution. Patients were kept nil orally for at least 6 hours before to the surgery. Each subject received 0.5ml of Tetanus toxoid injection intramuscularly and underwent a inj xylocaine 2% (0.2 ml) subcutaneosly sensitivity test.

### Pradhan karma (Operative procedure)

Local anesthesia was administered to the patient after positioning them on the operating table in lithotomy position. The part was painted with antiseptic solution. A cutting proctoscope is used to inspect the abnormalty of the pile mass . To prevent Kshara from spreading to healthy tissue, a gauze piece was wrapped around the adjacent tissues. The Kshara was put to the desired lesion using a spatula and left on the piles mass for 1-2 minutes till the count reached 100.

### Paschat karma (Post operative )

As soon as the sign of Samyak dagdha (correct cauterization) occurs, the Kshara is quickly neutralized by the acidic fluid (lemon water). Later, the cauterized area is cleaned with distilled water. Jatyadi ghrita was

L

administered to the cauterized lesion, followed by dressing. After 6-8 hours of Kshara patana, patients were allowed to consume liquids orally and were returned to their regular diets. Later, patients were recommended to take an Avagha Sweda (sitz bath) with Sphatikadiyoga (Alum powder) (5g/sitting) for 5-10 minutes while maintaining equal warm water from next day of Kshara patana. To relieve pain, inflammation, and promote healing Tab. Arshoghni vati (an ayurvedic medicine) 250 mg was given two times per day for 15 days,Haritaki churna 5 gm hs (at bed time with luke warm water ) followed by a dressing with 10 ml Jatyadhi oil as a therapeutic enema.

### DISCUSSION

Arsha symptoms like as Bleeding per anal, gudadaha, gudasrava, gudakandu were successfully treated with Ksharapatan (local application of Pratisaraniya Kshara to Arsha). Kshara possesses qualities of chhedan, bhedhan, and lekhan, and as a result, it produces a shrinking impact on pile masses. Gudadaha also subsided. Daha is caused by the vitiation of Pitta and Rakta doshas, both of which have Amla (acidic) properties that are mitigated by Kshara's Lavana Anurasa.

According to the Acharya Sushruta, 4 modes of haemostatic procedure are like Sandhana, Skandana, Pachana and Dahana.H6 Kshara is chemically caustic in nature. It has got the ability to cauterize the unhealthy tissue and it is used in the Dahan karma. Kshara contain some drugs which are of Kashaya Rasa.<sup>[20]</sup> Their action is Sandhankarama. Bhasma like Shukti was added to the Kshara during the preparation of Kshara, its action is to perform Pachana karma. Thus Kshara may be said to have its action through all the mode of haemostatic procedure. Local application of Kshara was done on the base and on the haemorrhoidal mass which was present above the dentate line, during the application of Apamarga kshara the color of haemorrhoid changes from reddish blue to Pakvajambuvarna, . Kshara causes Ksarana (destruction), i.e. chemical cauterization. It also causes Kshanana (inflammation) on the base of haemorrhoidal mass. The inflammatory reaction follows proliferation of fibroblast, obliteration of haemorrhoidal plexus and prevents bleeding and fibrosis and finally the fixation of anal cushion to underlying structure which further prevent protrusion and bleeding.

### CONCLUSION

It can be concluded that the pile masses shrank out with Apamarga Ksharapatan, but did not completely disappear. As a result, Apamarga ksharapatan was a successful therapy for treating first and second degree haeorrhoids. The significant element was that there were no side effects or harmful consequences demonstrated following the treatment. Apamarga Pratisaraniya Kshara can relieve post- operative pain, can help in reduction of post-operative size of pile mass, help in reduction of post-operative bleeding per rectum and effectively changes the color of pile mass after its application.

# REFERENCES

- Golighar J, Duthie H, Nixon H. Surgery of Anus, Rectum & Colon. Delhi: A. I. T. B. S. Publishers & Distributers, 2002; 5: 131-4.
- Sushrutacharya Sushruta samhita, Ayurved Tatva Sandipika, Dr. Ambikadata Shastri, Varanasi: Chaumbika Sanskrit Sansthan. Sutra Sthan, 2001; 35: 11-12.
- Pareekh S, Singh K, Subrata De, Sharma SJ. A comparative study of pratisaraniya ksharas (kutaja & palasha kshara) in the management of Arsha. Jamnagar: I.P.G.T. & R. A., Gujarat Ayurved University, 1999.
- Sushrutacharya Sushruta samhita, Ayurved Tatva Sandipika, Dr. Ambikadata Shastri, Varanasi: Chaumbika Sanskrit Sansthan. Sutra Sthana, 2001; 35: 11-11.
- 5. Prakash Hegde L, Harini A. Text book of dravyaguna vijnana. Volume, Chaukhambha publications, New Delhi, 2014; 2: 43.
- 6. Expounded by the Worshipful Atreya Punarvasu, Compiled by the great sage agnives'a and Redacted by Caraka & Drdhabala ENGLISH EDITION CHAUKHAMBHA ORIENTALIA VARANASI charak chikitsa, 14: 14-19.
- 7. SUŚRUTA SAMHITĀ Prof. K. R. SRIKANTHA MURTHY CHAUKHAMBHA ORIENTALIA VARANASI su. Nidan, 2: 10, 11, 12, 13, 15.
- 8. SUŚRUTA SAMHITĀ Prof. K. R. SRIKANTHA MURTHY CHAUKHAMBHA ORIENTALIA VARANASI su.chi, 77: 6-3.
- 9. Sushruta Samhita, Ayurveda Tattwa Sandipika by Ambika Dutta Shastri, Sharira Sthana, 34: 11-4.
- 10. Charaka Samhita, Charaka Chandrika Hindi Vyakhya by Bramhanand Tripathi, Sutra Sthana, 465; 26-7.
- 11. Sushruta Samhita, Ayurveda Tattwa Sandipika by Ambika Dutta Shastri, Sutra sthaan, 34; 11-5.
- 12. The A yurvedic Pharmacopoeia of India, 2: 7-9.
- 13. Sharma, P.V. Caraka Samhita, Chaukhambha Orientalia, Varanasi, India, 1981; 25: 40.
- 14. Acharya Sushruta, Sushruta Samhita with the Nibandha sangraha commentary of Sri Dalhana Acharya edited by Vaidya Jaadvji Trikamji Acharya and Narayan Ram Acharya Kavyatirtha, Chowkhambha Surabharathi Prakashan, Varanasi, 2012; 824, 46, 163, 165.
- 15. Srikanta Murthy, K.R. Astanga Samgraha (English translation) First Edition (Vol. I & II) Chaukhambha Orientalia, Varanasi, India, 1996; 1: 18-23.
- 16. Acharya LaghuVagbhata, Ashtanga Hrudaya, Edited with "Nirmala" Hindi commentary along with special deliberation, etc, by Dr. Brahmanand Tripathi, Chaukhambha Sanskrit pratishthan, reprint edition, 2011; 1295: 345.
- 17. Pal A, Gupta V, Tiwari G, Manigaunha A. A review on phyto-pharmacological aspects of Apamarg (Achyranthes aspera Linn.). Journal of Advanced Zoology, 2023; 44.

L

- Shastri K, New Delhi: Motilala Banarsidas. Rasa Tarangini of Sadanada Sharma, Taranga, 2004; 14, 337, 11: 59-61.
- 19. Dr. Anantaram Sharma, Sushruta Samhita, Sutrasthan, Varanasi; Chaukhambha Surbharti Prakashana, Edition, 2010; 111: 14-41.
- 20. Dr. Anantaram Sharma, Sushruta Samhita, Sutrasthan, Varanasi; Chaukhambha Surbharti Prakashana, Edition, 2010; 7: 11-5.

L