

# Clinical Utility of Panchakarma in Ardhavabhedaka

Dr. Basavaraja<sup>1</sup>, Dr. G. S. Bhadrinath<sup>2</sup>

<sup>1</sup>Post Graduate Scholar, Shri Vijaya Mahantesh Ayurvedic Medical College, Ilkal, Karnataka, India

<sup>2</sup>Professor and HOD, Shri Vijaya Mahantesh Ayurvedic Medical College, Ilkal, Karnataka, India

## ABSTRACT

“Your brain is the organ of your personality, character, and intelligence and is heavily involved in making you who you are” by Daniel G. Amen which is a true saying. It is the brain, which controls all the voluntary and involuntary functions of the body. Thus, brain is the supreme, important and major organ of the body. Headache is one of the most common reasons patients visit the emergency department, with migraines accounting for over one million annual US emergency department visits. Migraine is a primary headache disorder characterized by recurrent headaches that are moderate to severe, usually affecting one half of the head, pulsating in nature and last from two to 72 hours. Associated symptoms may include nausea, vomiting, sensitivity to light and sound. Our Acharyas also give the prime importance to Shirah (head) among the ‘Trimarmas’. It is considered as Uttamanga i.e., where vital breath of living beings and also all the sense organs are located and which is best of all organs. Acharya Kumarshira Bharadwaja and Shounaka emphasized that head of the foetus develops first, it is the site of all important Indriyas. Injury to Shirah may lead to death or Asadhya Vyadhi. In Ayurvedic literatures, almost all the Acharyas have explained Ardhavbhedaka under Shirorogas. According to Acharya Charaka, it is Vatakapahaja and according to Acharya Sushruta, it is Tridoshaja Vyadhi.

**KEYWORDS:** Headache, Migraine, Trimarmas, Uttamanga, Ardhavbhedaka, Shirorogas

## INTRODUCTION

The Indian mythology emphasizes the prime importance of Shirah in the body. In Shrimad Bhagvadgeeta, Lord Krishna said that the base of the man is head while whole body is just like its branch.<sup>[1]</sup> There are 107 Marmas in the human body and the Pradhana Marma is Shirah.<sup>[2]</sup> Shirah is considered as “Uttamanga” among all the Angas of the Sharira and it is the Ashraya of the Prana and all Indriyas.<sup>[3]</sup> Ardhavbhedaka Roga is one among the Shirorogas mentioned in Ayurvedic texts.<sup>[4]</sup>

According to Acharya Charaka, there are five types of Shirorogas in Sutrasthana i.e., Vataja, Pittaja, Kaphaja, Sannipataja and Krimija. He also mentioned four additional Shirorogas i.e., Shankhaka, Ardhavbhedaka, Suryavarta and Anantvata in Siddhisthana.<sup>[5]</sup>

According to Acharya Sushruta, there are eleven types of Shirorogas i.e., Vatika, Paittika, Kaphaja,

Sannipatika, Raktaja, Kshayaja, Krimija, Suryavarta, Anantvata, Ardhavbhedaka and Shankhaka.<sup>[6]</sup>

The word Ardhavbhedaka comprises of two components viz. Ardha and Avbhedaka. Ardha means half or half side, Ava suggests bad prognosis and Bhedaka means breaking, perforating or bursting out type of pain. Thus, literal meaning of Ardhavbhedaka is perforating or bursting out like pain in one half of the head either right or left. Acharya Chakrapani, the commentator of Charaka Samhita had clarified the term Ardhavbhedaka by saying “Ardha Mastaka Vedana”.<sup>[7]</sup> According to Acharya Charaka and Madhava, it is Vata Kaphaja disease.<sup>[8]</sup> According to Acharya Sushruta, it is Tridoshaja disease.<sup>[9]</sup> According to Acharya Vagbhatta, it is Vataja disease.<sup>[10]</sup>

## Definition of Ardhavbhedaka

According to Acharya Sushruta, if one half of the head develops severe tearing and pricking pain,

**How to cite this paper:** Dr. Basavaraja | Dr. G. S. Bhadrinath "Clinical Utility of Panchakarma in Ardhavabhedaka" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-8 | Issue-5, October 2024, pp.918-923, URL: [www.ijtsrd.com/papers/ijtsrd70471.pdf](http://www.ijtsrd.com/papers/ijtsrd70471.pdf)



Copyright © 2024 by author (s) and International Journal of Trend in Scientific Research and Development Journal. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (<http://creativecommons.org/licenses/by/4.0>)



giddiness and piercing pain, suddenly after a fortnight or ten days. This should be diagnosed as Ardhavbhedaka caused by all the three Doshas.<sup>[11]</sup>

According to Acharya Vagbhatta, pain in half side of head is considered as Ardhavbhedaka. The episodes of pain arise in the interval of fifteen days or one month and the pain subsides by itself. If the condition becomes aggravated, it may even impair the functions of the eye and ear.<sup>[12]</sup>

### Nidana of Ardhavbhedaka

In Ayurvedic classics, Acharyas have described the following aetiological factors responsible for Shirorogas:

- Acharya Charaka has mentioned aetiology of Shirorogas in “Kiyantah Shirasiyadhyaya” of Sutrasthana. Sandharana (Suppression of natural urges specially of Mutravega, Purishavega, Kshavathuvega and Nidravega), Divaswapana (Day sleeping), Ratrijagrana (Overnight awakening), Mada (Alcohol intake), Uchha Bhashana (Excessive talk), Avashyaya (Due to excessive exposure to fog), Pragvata (Exposure to eastern winds), Atimaithuna (Excessive sexual indulgence), Asatmya Gandha (Bad odour), Raja, Dhuma, Hima and Atapa (Excessive exposure to dust, smoke, cold weather and sun rays), Guru Ahara, Amla Ahara and Harita Dravya (Excessive intake of heavy, sour food and rhizomes), Sheeta Ambu Sevana (Excessive intake of cold water), Shiroabhighata (Head injury), Dushta Ama (Vitiated Ama), Rodana (excessive crying), Ashruvega Nigraha (Suppression of tears), Meghagamana (advent of cloud), Manasa Santapa (Mental stress) and Desha and Kala Viparyaya (regimen contrary to locality and season). Due to these aetiological factors, the Vatadi Doshas get aggravated resulting in the vitiation of Rakta Dhatu in the Shirah, leading to the manifestation of Shiro Roga.<sup>[13]</sup>
- Acharya Vagbhata and Yogaratnakara have included Utsveda (Excessive sudation), Krimi (Worms), Upadhana Dvesa (Avoidance of pillow), Abhyanga Dvesa (aversion to massage), Prateteshana (constant seeing), Mrija Dvesa, Ambukridha, Atiambu as aetiological factors for Shirorogas.<sup>[14]</sup>
- In Harita Samhita, Shirahshoola is specifically mentioned under the heading of Karmaja Vyadhi.<sup>[15]</sup>

### Purvarupa of Ardhavbhedaka

Though there are no specific Purvarupas mentioned in Ayurvedic classics for Ardhavbhedaka, yet one reference regarding Purvarupas of Shiroroga is

available in Vaidya Vinod which states that restricted movements of head i.e., extension and flexion along with heaviness in head may be present in Kapha dominant Shiroroga.

In Madhava Nidana published by Sastu Sahitya in 1985, General Purvarupas for Shirahshoola has been mentioned as Daha and Supti.

### Rupa of Ardhavbhedak

- According to Acharya Charaka, the features of Ardhavbhedaka are severe pain in half side of the head, affecting particularly neck, eye brows, temporal region, ear, eye and forehead. The pain is like cutting by the sharp objects or piercing in nature.<sup>[16]</sup>
- Acharya Sushruta has mentioned severe piercing and tearing pain in one half of the head associated with giddiness. These features appear every fortnightly or ten days or any time.<sup>[17]</sup>
- Acharya Vagbhatta has mentioned Ghata (occipital region according to Indu and Parietal region according to Arundatta) and all the Shirogata Sandhis in addition where the pain occurs. He has also emphasized on its paroxysmal nature and said that it comes in every Paksha (fortnightly) or Masa (Month). The headache subsides by itself i.e., Svayameva Upashamyat.<sup>[18]</sup>

All the scholars have mentioned that the headache of Ardhavbhedaka occurs in one half of the head. The specific sites of headache are also mentioned in texts. Acharya Charaka has described the prominently involved sites as Manya (neck), Bhru (eyebrow), Shankha (Temporal region), Karna (ear), Akshi (eye) and Lalata (fore head). In addition, Acharya Vagbhatta mention one extra site i.e., Ghata (occipital region). Commentator Indu suggest Krikatika means occipital region and commentator Arundatta suggest Shankhasya Upari Bhaga i.e., parietal region for it.

### Samprapti Ghataka of Ardhavbhedaka

- **Dosha** : Tridoshaja (Su.Ut.25)

Vata Kaphaja (Ch. Si. 9)

Vataja (A.H.Ut.23/7-8)

- **Dushya** : Rasa-Rakta
- **Srotasa** : Rasa-Raktavaha Srotasa
- **Srotodushti** : Sanga, Vimargagamana
- **Agnimandya**: Jatharagnimandya, Rakta Dhatvagnimandya
- **Udbhava** : Amashaya - Pakvashya
- **Sanchara** : Rasayani
- **Marga** : Abhyantara

- **Svabhava** : Ashukari
- **Adhisthana** : Shirah
- **Vyaktisthana** : Shirah and its appendages

### Chikitsa of Shiroroga

#### General Management of Shiroroga

In all type of headache, the following preventive measures should be taken,

- **Nidana Parivarjana**: According to the treatment point of view, the etiological factors responsible for headache should be avoided. Take rest, avoid Vegavarodha, control the mind etc. Also, other Aharaja and Viharaja Hetus should be avoided.<sup>[19]</sup>
- **Samshodhana Chikitsa**: Nasya Karma has been advised as the important method of treatment in all the Urdhavajatrugata Rogas.<sup>[20]</sup>
- **Samshamana Chikitsa**: Along with Nidana Parivarjana, the vitiated Doshas should be brought to their normal state with the help of drugs, based on “Samanya Vishesh Sidhanta” according to predominance of the manifesting Dosha.<sup>[21]</sup>
- **Other Measures**: Yogratnakara has described the following measures for Shiroroga: Snehana, Upanaha, Svedana, Dhumpna, Lepa, Langhana, Parisheka, Agnikarma, Raktamokshana, Shirobasti.<sup>[22]</sup>

These measures should be applied after considering the predominance of Dosha and other general considerations of the patient. In Bhaishajya Ratnavali, general line of treatment for Shirah-Shoola has been described which are Svedana, Nasya, Dhumpna, Virechana, Lepa, Vamana, Langhana, Shirobasti, Raktamokshana, Agnikarma, Upanaha, Purana Ghrita and Shashtika Shali.<sup>[23]</sup>

#### Specific management of Ardhavabhedaka

Ardhavbhedaka is best treated with Ghrita, Taila and Majja, Shirovirechana, Kaya virechana, Nadisveda, Niruha and Anuvasana Basti, Upanaha and ShiroBasti.<sup>[24]</sup> Acharya Sushruta has mentioned that treatment of Ardhavbhedaka is same as Suryavarta.<sup>[25]</sup>

#### Panchkarma Procedures

- **Nasya Karma**: Administration of drug or medicated oil through the nose is known as Nasya Karma.<sup>[26]</sup> Acharya Charaka has not mentioned specific duration of the Nasya therapy.<sup>[27]</sup> According to Sushruta, Nasya may be given repeatedly at the interval of 1, 2, 7 and 21 days depending upon the condition of the patient and the diseases he suffer.<sup>[28]</sup>

#### Formulations used for Nasya Karma in Ardhavbhedaka are:

1. Sirishphala Nasya, Vanshmooladya Avpidana, Madhukadhya Avapidana, and Madhuradi Nasya.<sup>[29]</sup>
  2. Madanphala mixed with Mishri and Godughda should use before sunrise.<sup>[30]</sup>
  3. Powder of fruit and root of Shweta Aprajita mixed with water.<sup>[31]</sup>
  4. Vidanga powder and Krishana Tila paste mixed with water and extracted Rasa.<sup>[32]</sup>
  5. Taila/Ghrita: Shadabindu Taila, Anu Taila, Dashmoola Taila, Gunja Taila, Goghrita, Devadarvadi Ghrita, Kumkumadi Ghrita.<sup>[33,34]</sup>
- **Basti Karma**: In Ardhavbhedaka, Niruha Basti prepared with Vatashamaka drugs should be given followed by Anuvasna Basti prepared with Ghrita and Taila.<sup>[35]</sup>
  - **Upnaha**: Poultice of Vatashamaka drugs like Dashmoola mixed with hot milk wrapped in a cloth in the paste form can bandaged around the head.<sup>[35]</sup>
  - **Shirobasti**: In Shirobasti, a special cap opened at both ends is prepared from thick and firm leather, having height of 12 Angula is tied around the head and medicated oil is filled into this. In Ardhavbhedaka, Vata and Vatakapha Shamaka medicated oils like Dasmoola Taila are used.<sup>[35]</sup>
  - **Dahana Karma**: It is indicated in the last when the pharmacological approaches are not responded in Ardhavbhedaka. According to Acharya Charaka, Dahana should be done at Shankha and Lal ata Pradesha, limited to dermal layer (Twaka Daha) with the help of Sharkandagra or Godanta.<sup>[35]</sup> Acharya Bhela has prescribed Pippali for Dahana Karma.<sup>[36]</sup>
  - **Shiro-Abhyanga**: Massage over head with
  - Dashmoola Taila, Mahamayura Ghrita and Prapondrikadi Taila.<sup>[37]</sup>
  - **Shirolepa**
  - 1. Process black pepper powder with Bhringraja Swarasa and keep in the air tight container after drying. Use this with Bhringraja Swarasa during attack.<sup>[38]</sup>
  - 2. Black tila, Jatamansi powder mixed with Saindhava Lavana and honey.<sup>[39]</sup>
  - 3. Kumkuma Ghrita Lepa<sup>[34]</sup>
  - 4. Sarivadi Lepa<sup>[40]</sup>

**Pathya-Apathya**

Pathya-Apathya<sup>[41]</sup> for Shiroshoola are mentioned only in Bhaisajya Ratnavali - Shirorogadhikara.

**Pathya**

**Chikitsa** Swedana, Nasya, Dhumpna, Virechana, Lepa, Vamana, Langhana, Shirobasti,  
**Upakrama** Raktamokshana, Agnikarma, Upanaha.

Diet Consuming Purana Ghrita, Shali, Shashtikshali, Yusha, Dugdha, Dhanvamansa.

Vegetables Patolam, Shigru, Vastuka, Karvellaka.

Fruits Amra, Dhatri, Dadima, Matulunga, Narikela.

Liquid diet Dugdha, Taila, Kanji, Takra.

Medicines Pathya, Kushta, Bhingaraj, Kumari, Musta, Ushira, Chandrika, Karpura, Gandhasar.

**Apathya**

**Vegadharanam Kshabthu, Jrimbha, Mutra, Baspa, Nidra and Pureesh**

Apathya Ahara Dushta Neer, Virudha Anna, water from the rivers of Sahyadri and Vindhya Parvata.

Apathya Vihara Dantadhavanam, Divanidhra

**Reference**

- [1] Shrimad Bhagvadgeeta 15/1
- [2] Sushruta Samhita of Maharsi Sushruta edited by Ayurveda Tattva Sandipika by Kaviraja Ambikadutta Shastri, Chaukhambha Sanskrit Sansthan, Part I (Reprint 2012) Sharira sthana chapter 6/9
- [3] Charaka Samhita by Agnivesha, Revised by Charaka and Dridhabala 'Vidyotini' Hindi commentary Part I (Reprint year 2012) Chaukhambha Bharati Academy, Varanasi, by Prof. Kashinath Shastri and Dr. Gorakhnath Chaturvedi, Sutra sthana chapter 17/12
- [4] Charaka Samhita of Agnivesha Revised by Charaka and Dridhabala, 'Vidyotini' Hindi commentary by Pt. Kasinath satri and Dr. Gorakha Nath Chaturvedi, Chaukhambha Bharati Academy, Varanasi, Part II, (Reprint year 2012), Shidhi sthana chapter 9/74-78
- [5] Charaka Samhita by Agnivesha, Revised by Charaka and Dridhabala 'Vidyotini' Hindi commentary Part I and II (Reprint year 2012) Chaukhambha Bharati Academy, Varanasi, by Prof. Kashinath Shastri and Dr. Gorakhnath Chaturvedi, Sutra sthana chapter 17/15 and Shidhi sthana chapter 9/70-87
- [6] Sushruta Samhita of Maharsi Sushruta edited by Ayurveda Tattva Sandipika by Kaviraja Ambikadutta Shastri, Chaukhambha Sanskrit Sansthan, Part II (Reprint 2012) Uttara tantra chapter 25/3-4
- [7] Ayurveda Dipika commentary of Chakrapanidatta on Charaka Samhita; Chaukhambha Prakashan, Varanasi, Sutra sthana chapter 7/16
- [8] Charaka Samhita by Agnivesha, Revised by Charaka and Dridhabala 'Vidyotini' Hindi commentary Part I (Reprint year 2012) Chaukhambha Bharati Academy, Varanasi, by Prof. Kashinath Shastri and Dr. Gorakhnath Chaturvedi, Shidhi sthana chapter 9/74-78
- [9] Sushruta Samhita of Maharsi Sushruta edited by Ayurveda Tattva Sandipika by Kaviraja Ambikadutta Shastri, Chaukhambha Sanskrit Sansthan, Part I (Reprint 2012) Uttara Tantra chapter 25/15
- [10] Astanga Hridayam of Vagbhata, Vidyotini hindi commentary by Kaviraj Atrideva Gupta; Chaukhambha Sanskrit Sansthan, Varanasi 13<sup>th</sup> edition 2000, Uttar tantra chapter 23/3-8
- [11] Sushruta Samhita of Maharsi Sushruta edited by Ayurveda Tattva Sandipika by Kaviraja Ambikadutta Shastri, Chaukhambha Sanskrit Sansthan, Part II (Reprint 2012) Uttara tantra chapter 25/15
- [12] Astanga Hridayam of Vagbhata, Vidyotini hindi commentary by Kaviraj Atrideva Gupta; Chaukhambha Sanskrit Sansthan, Varanasi 13<sup>th</sup> edition 2000, Uttar tantra chapter 23/7-8
- [13] Charaka Samhita by Agnivesha, Revised by Charaka and Dridhabala 'Vidyotini'



- [14] Hindi commentary Part I (Reprint year 2012) Chaukhamba Bharati Academy, Varanasi, by Prof. Kashinath Shastri and Dr. Gorakhnath Chaturvedi, Sutra sthana chapter 17/8-11
- [15] Astanga Hridayam of Vagbhata, Vidyotini hindi commentary by Kaviraj Atrideva Gupta; Chaukhamba Sanskrit Sansthan, Varanasi 13<sup>th</sup> edition 2000, Uttar tantra chapter 23/1-2
- [16] Harita Samhita with Hari hindi commentary by Pandit Hariharprasad Tripathi; Chaukhamba Krishandas Academy, Varanasi; 2<sup>nd</sup> edition 2009; Diwitya sthana 1/11
- [17] Charaka Samhita by Agnivesha, Revised by Charaka and Dridhabala 'Vidyotini' Hindi commentary Part II (Reprint year 2012) Chaukhamba Bharati Academy, Varanasi, by Prof. Kashinath Shastri and Dr. Gorakhnath Chaturvedi, Shidhi sthana chapter 9/74-78
- [18] Sushruta Samhita of Maharsi Sushruta edited by Ayurveda Tattva Sandipika by Kaviraja Ambikadutta Shastri, Chaukhambha Sanskrit Sansthan, Part II (Reprint 2012) Uttara tantra chapter 25/15-16
- [19] Astanga Hridayam of Vagbhata, Vidyotini hindi commentary by Kaviraj Atrideva Gupta; Chaukhamba Sanskrit Sansthan, Varanasi 13<sup>th</sup> edition 2000, Uttar tantra chapter 23/7-8
- [20] Sushruta Samhita of Maharsi Sushruta edited by Ayurveda Tattva Sandipika by Kaviraja Ambikadutta Shastri, Chaukhambha Sanskrit Sansthan, Part II (Reprint 2012) Uttara tantra chapter 1/25
- [21] Charaka Samhita by Agnivesha, Revised by Charaka and Dridhabala 'Vidyotini' Hindi commentary Part II (Reprint year 2012) Chaukhamba Bharati Academy, Varanasi, by Prof. Kashinath Shastri and Dr. Gorakhnath Chaturvedi, Shidhi sthana chapter 2/22
- [22] Charaka Samhita by Agnivesha, Revised by Charaka and Dridhabala 'Vidyotini' Hindi commentary Part II (Reprint year 2012) Chaukhamba Bharati Academy, Varanasi, by Prof. Kashinath Shastri and Dr. Gorakhnath Chaturvedi, Sutra sthana chapter 1/44
- [23] Yogaratnakara with Vidyotini hindi commentary by Vaidya Laksmipati Shastri edited by Brahmasankar Shastri, Chaukhambha Prakashan, Varanasi (Reprint 2013), Uttarardh, Shiroroga Chikitsa
- [24] Bhaisajya Ratnavali of Kaviraj Govind Das Sen edited by Prof. Siddhi Nandan Mishra, Chaukhamba Surbharati Prakashan Varanasi, Part II Shirorogadhikara 65/91-95
- [25] Charaka Samhita by Agnivesha, Revised by Charaka and Dridhabala 'Vidyotini' Hindi commentary Part II (Reprint year 2012) Chaukhamba Bharati Academy, Varanasi, by Prof. Kashinath Shastri and Dr. Gorakhnath Chaturvedi, Shidhi sthana chapter 9/ 77-78
- [26] Sushruta Samhita of Maharsi Sushruta edited by Ayurveda Tattva Sandipika by Kaviraja Ambikadutta Shastri, Chaukhambha Sanskrit Sansthan, Part II (Reprint 2012) Uttara tantra chapter 26/31-35
- [27] Sushruta Samhita of Maharsi Sushruta edited by Ayurveda Tattva Sandipika by Kaviraja Ambikadutta Shastri, Chaukhambha Sanskrit Sansthan, Part I (Reprint 2012) Chikitsa sthana chapter 40/21
- [28] Charaka Samhita by Agnivesha, Revised by Charaka and Dridhabala 'Vidyotini' Hindi commentary Part II (Reprint year 2012) Chaukhamba Bharati Academy, Varanasi, by Prof. Kashinath Shastri and Dr. Gorakhnath Chaturvedi, Shidhi sthana
- [29] Sushruta Samhita of Maharsi Sushruta edited by Ayurveda Tattva Sandipika by Kaviraja Ambikadutta Shastri, Chaukhambha Sanskrit Sansthan, Part I (Reprint 2012) Chikitsa sthana chapter 40/42-43
- [30] Sushruta Samhita of Maharsi Sushruta edited by Ayurveda Tattva Sandipika by Kaviraja Ambikadutta Shastri, Chaukhambha Sanskrit Sansthan, Part II (Reprint 2012) Uttara tantra chapter 26/31-35
- [31] Yogaratnakara with Vidyotini hindi commentary by Vaidya Laksmipati Shastri edited by Brahmasankar Shastri, Chaukhambha Sanskrit Sansthan, Varanasi; 3<sup>rd</sup> edition 1983, Uttarardh, Suryavratardhavbhedaka chikitsa/11-12
- [32] Vagbhatacharya, Rasaratna Samuchchaya with Suratnojjvala hindi commentary by Kaviraj Ambikadutta Shastri, Chaukhambha Amrabharati Prakashan, Varanasi; 10<sup>th</sup> edition 2015; 24/74
- [33] Bhaisajya Ratnavali of Kaviraj Govind Das Sen edited by Prof. Siddhi
- [34] Nandan Mishra, Chaukhamba Surbharati Prakashan Varanasi, Part II Shirorogadhikara 65/34

- [35] Bhaisajya Ratnavali of Kaviraj Govind Das Sen edited by Prof. Siddhi Nandan Mishra, Chaukhamba Surbharati Prakashan Varanasi, Part II Shirorogadhikara 65/32,91-95,153-156
- [36] Harita Samhita with Hari hindi commentary by Pandit Hariharprasad Tripathi; Chaukhamba Krishandas Academy, Varanasi; 2<sup>nd</sup> edition 2009; Tritya sthana 40/30-35
- [37] Charaka Samhita by Agnivesha, Revised by Charaka and Dridhabala 'Vidyotini' Hindi commentary Part II (Reprint year 2012) Chaukhamba Bharati Academy, Varanasi, by Prof. Kashinath Shastri and Dr. Gorakhnath Chaturvedi, Shidhi sthana chapter 9/77-78
- [38] Bhela Samhita with Vinodini hindi commentary by Abhay Katyayan; Chaukhamba Surbharati Prakashan, Varanasi; 1<sup>st</sup> edition 2009, Chikitsa sthana 21/28
- [39] Astanga Hridayam, Nirmala hindi commentary by Brahmanand Tripathi; Chaukhamba Sanskrit Pratishthan, Delhi (Reprint year 2007), Uttar tantra chapter 24/44-45,50-55
- [40] Vagbhatacharya, Rasaratna Samuchchaya with Suratinajjala hindi commentary by Kaviraj Ambikadutta Shastri, Chaukhamba Amrabharati Prakashan, Varanasi; 10<sup>th</sup> edition 2015; 24/76
- [41] Bhaisajya Ratnavali of Kaviraj Govind Das Sen edited by Prof. Siddhi Nandan Mishra, Chaukhamba Surbharati Prakashan Varanasi, Part II Shirorogadhikara 65/33
- [42] Bhaisajya Ratnavali of Kaviraj Govind Das Sen edited by Prof. Siddhi Nandan Mishra, Chaukhamba Surbharati Prakashan Varanasi, Part II Shirorogadhikara 65/25
- [43] Bhaisajya Ratnavali of Kaviraj Govind Das Sen edited by Prof. Siddhi Nandan Mishra, Chaukhamba Surbharati Prakashan Varanasi, Part II Shirorogadhikara 65/166-169.

