

KAMALA- AN AYURVEDIC PERSPECTIVE**Dr. Uma Thakur***

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ABSTRACT

Ayurveda is traditionally skillful, treating liver diseases since centuries and drug toxicity appears to be less as compared to conventional medicine. Acharyas like Charaka, Susruta and Vagbhata have vividly described Kamala Roga. The management of Kamala and its complication with drugs, diet and life style have been mentioned in Ayurvedic classics. Charaka has considered it as an advance stage of Pandu Roga and described Kamala in the 16th chapter of Chikitsa Sthana, along with Pandu Roga. Kamala is a Raktapradoshjavikara.^[1]

KEYWORDS: Kamala Roga, Chikitsa Sthana, Pandu Roga, Raktapradoshjavikara.

INTRODUCTION

Kamala is one of the important common clinical entity in Ayurveda whose description appears to be most comprehensive and incorporates the disorders of hepatobiliary system of modern medicine. Hepatobiliary diseases are the serious ailments and the medical treatment scenario is worsening day by day for lack of proven precise therapeutic regimen. In Ayurvedic literature Kamala has been mentioned as a sequel of Pandu Roga. It occurs when Pandu Rogi takes more Paittik Ahara Vihara.^[2] Jaundice a yellowish discoloration of tissue resulting from the deposition of bilirubin is the common presentation of patients with liver and biliary diseases. Ayurveda is a whole medical system that is based on various theories about health and illness and on ways to prevent, manage or treat health problems. Liver is considered to be one of the vital organs which help in maintaining the health of body. Liver is said to be the seat of Pitta^[3] all the functions of Pitta especially those of Ranjaka Pitta are attributed to liver.

Definition**Pandurogi Tu Yo Atyartham Pitlani Nishevete****Tasya Pittam Asrigmansa Dagdha Arogyakalpte^[4]**

The patient of Pandu Roga who indulges in Pitta aggravating diet and regimens, the Pitta Dosha gets aggravated and vitiates the Rakta Dhatu and Mansa Dhatu to precipitate a disease condition known as Kamala Roga.

Kutsitam Mala Yasmin Roge Sa Kamala Rogah^[5]

There is regular production of Mala (waste material) and its excretion from the body is essential to maintain health. Malas, considered as one of the pillars of the body become Kutsita (vitiating) once it is accumulated in the body excessively. If not excreted from the body properly due to some physiological or pathological condition it leads to discolouration of Mala Sthanas.

Concept of Pitta in Kamala: Kamala is one of the Pitta predominant diseases. It was pointed out that Pitta Vrudhi Lakshana, is a responsible colouring factor of Peeta in the sense that abnormal colour such as Pitta, Haridra manifestation they become characteristic features of Kamala Roga. The term Pitta is derived from the root of "Tapa". Tapa Santhape^[6] –production of heat Kamala is considered as a Raktapradoshaja Vikara. Ranjaka Pitta and its Sthana Yakrit are also involved in its Samprapti. Ranjaka refers to bile pigments, Pitta refers to bile salts. Ranjaka Pitta is one of the fine varieties of Pitta. It is excreted by Yakrit. Rasa Dhatu is stated to contribute to the formation of Rakta with the help of Ranjaka Pitta, which is claimed to impart to Rasa its colour. When Ranjaka Pitta enters the Kosta it also colours the Mala i.e. Puresha to yellow. There it is called Malaranjaka Pitta. As these functions are performed by Ranjaka Pitta, it is correlated to bile pigment. Ranjaka Pitta gives colour to Rasadhatu and forms Rakta and at the same time, Ranjaka Pitta is a byproduct of Raktadhatu. Ranjaka factor of Ranjaka Pitta is correlated to bile pigments in terms of Rasa Ranjaka Pitta and Mala Ranjaka Pitta. Rasa Ranjaka Pitta is haemoglobin and Mala Ranjaka Pitta is the byproduct of haemoglobin i.e. bilirubin / bile which is formed after splitting of haemoglobin. Ranjaka Pitta is also called as Ranjakagni because Agni carries the function of digestion of food. Therefore Pitta the substance of Ranjaka Pitta is compared to bile salt. Bile salts have choleric action that stimulates the secretion of bile from liver (Piyyarechaka). It is this Ranjaka Pitta, which provides an exceedingly valuable tool for the diagnosis of both Koshashrita Kamala as well as Shakhashrita Kamala.^[7]

Classification of Kamala Roga**A. On the basis of Ayurvedic classics****1. Charaka Samhita**

Kosthashrita Kamala

Shakhashrita Kamala

2. Sushruta Samhita

Kamala

Panaki

Halimaka

Laghraka or Alasakhya

3. Astanga Hridaya

Swatantra Kamala

Paratantra Kamala

B. On the basis of Samprapti**1. Sankhya Samprapti**

Kosthashrita Kamala Roga

Shakhashrita Kamala Roga

2. Vikalpa Samprapti

Bahupitta Kamala Roga

Alpapitta Kamala Roga

3. Pradhanya Samprapti

Swatantra Kamala Roga

Paratantra Kamala Roga

4. Bala Samprapti

Mridu- Kosthashakhashrita Kamala Roga.

Daruna- Kumbha Kamala, Halimaka.

C. Classification of Kamala Roga on the basis of its Nidana (etiology)

➤ Due to excessive intake of Pittaja Ahara and Vihara by the Pandu Rogi or suffering from any other disease.

➤ Due to excessive intake of Pitta aggravating Ahara and Vihara by disease free persons i.e. by the healthy individuals.

Kosthashrita Kamala Roga: the term Kostha means “Sharir Madhya” or Maha Srotasa⁸ Kosthashrita Kamala is a Nidanarthakari Roga. It cannot occur independently. During convalescing period, if Pandu Rogi consumes Pitta aggravating diet, the vitiated Pitta harbours in the Kostha, some spreads towards Shakha and some amount stays in the gastrointestinal tract due to function of Vata dosha. Arundatta comments the Kosthashrita Kamala as a synonym of Panduroga.^[9] This refers to Pittaja Pandu Roga since not all the varieties of Pandu Roga cause Kosthashrita Kamala. This disease is also called as Bahupitta Kamala that means production of Pitta is more hence Pittaja Pandu can be the cause of this Kamala. Dalhana commenting on Sushruta statement “Aamyantey”^[10] opines that Kosthashrita Kamala can occur not only after Pandu Roga but can also manifest after any other disorders (Anaya Rogante Cha).

Shakhashrita Kamala Roga: it occurs as Swatantra Kamala. When the Pitta retained in the Shakhas due to obstruction of Pittavaha Srotas by vitiated Kapha Dosha spreads into the whole body by aggravated Vata Dosha via Rasa, Rakta Dhatus produces Shakhashrita Kamala Roga. In this type of Kamala Roga Pitta Vriddhi does not occur due to Pitta vitiating Nidana. But its main cause is obstruction of Pittavaha Strotasa, so commentator Chakrapani, has termed it as Alpa Pittamaka Kamala Roga. Due to obstruction of Pittavaha Strotasa Pitta does not reach to the Pakwashya which is responsible for the normal colour of stool. As a result “Tila Pishta Sannibhama Varchas” (clay coloured stool) are produced. On the other hand major part of the pitta retained in the Shakha mixes with Rakta Dhatu (blood) and there is excretion of dark yellow colour of urine.

Nidana: Various etiological factors precipitating Pitta leading to manifestation of Kamala.

Table. 1: Category wise Nidana of Kamala Roga.^[11]

Aharaja nidana	Viharaja nidana	Ritujanya nidana	Guna Pradhana nidana	Manashik Nidana
Kshara	Diwaswapna	Sarad ritu	Ruksha	Kama
Amla	Ati vyayam	Greeshma ritu	Sheeta	Chinta
Lavana	Ati maithuna	Varsha ritu	Guru	Shoka
Ati ushna	Pratikarma	Meghanta	Swadu	Bhaya
Viruddha	Vaishamy	Ardharatri		Krodh
Asatmya bhojan	Vega dharana	Madhyanha		

Poorva Roopa

Poorvarupa are the prodromal symptoms or the premonitory indications that occurs before the complete manifestation of the disease. The provoked Doshas at the stage of Sthanasamshraya will manifest the sign / symptoms of the forth coming disease. Specific prodromal symptoms have not been mentioned in Ayurvedic classics. But in Sushruta Samhita premonitory symptoms are given below.^[12]

- Twak sphatonam (cracking of the skin)
- Sthivanam (salivation or spitting)
- Gatrasada (lassitude)
- Mridbhakshana (desire for eating clay)
- Kuta shotha (swelling if the eyelids)
- Vinmutra peetatwa (yellow colour of the stool and urine)
- Avipaka (indigestion).

Specific Poorvarupa for Kamala have not been mentioned in Brihatrayi or Laghutrayi. In Astanga Hridya, Poorvarooopa is defined as Alpavyaktatvum or Rupa^[13] and hence the Rupa with low intensity (Alpabala) can be considered as Poorva Rupas of Kamala (Swtantraja). In Sushruta Samhita Kamala is described as a synonym of Pandu. So Poorvarupas of Pandu Roga may be considered as Poorvarupa of Kamala.

Roopa

Any disease manifests only after the completion of Dosha Dushya Samurchana. The signs and symptoms appears in the fifth Kriyakala i.e. Vyakthavastha. The Lakshanas through which the disease is expressed are termed as Roopa.^[14] (ch. Chi. 16/35-36).

Roopa of Kosthashrita Kamala

- Haridra Netra Nakha Twak Aanana - Patients of Kosthashrita Kamala develops yellow discolouration in sclera, nails, skin and face. Bahu Pitta Kamala is a synonym of Kosthashrita Kamala, which means increased production of Ranjaka Pitta takes place in the Rakta (Shakha). as a result Ranjaka Pitta rises in Rakta and circulates in the body giving rise to Haridra Netra Twak Anana.

- Raktapeeta Shakrita-The patients of Kosthashrita Kamala possess dark yellow or reddish yellowstool. In Kosthashrita Kamala, increased production of Ranjakpitta is observed in Shakha and Kosta. That means the Ranjaka Pitta not only produces more quantity in Shakha

(Rakta) it is also excreted more in Kostha (intestine). Therefore more the quantity of Ranjaka Pitta (bile) excreted in Kostha darker is the stool (Mala), so called as Mala Ranjakapitta.

- Raktapeeta Mutrata- patient possess dark urine because of increased quantity of Ranjaka Pitta excreted in the urine.
- Bhekavarna- Patient presents with the signs and symptoms of yellowish appearance of the body, which resembles the frog in the rainy season. It is observed that the frogs in rainy season have pallor with light yellow colour. Such a light yellow colour is being observed in sclera (Netra), skin (Twacha), face (Anana) and body. Hence, there will be Panduta observed in Kosthashrita Kamala because only after establishment of Pandu Roga, Kosthashrita Kamala can occur.
- Hatindriya - diminished perception of power of sense organs occurs due to severe Raktakshaya (anemia).
- Daurbalya- weakness occurs because of Raktakshaya.
- Aruchi- tastelessness, anorexia
- Avipaka - this symptom occurs due to upset in Annavaha Srotas
- Daha - burning sensation in the body

Roopa of shakhashrita kamala: Only Charaka Samhita and Astang Hridaya have described the Lakshana of Shakhashrita Kamala.^[15] Chakrapani stated that “Tilapista Nibha Varchah” as Pratyatma Lakshana of Shakhashrita Kamala. Ranjaka Pitta is yellow in colour. This colour is very important tool for diagnosis of Kamala. Its rise in the blood (Shakha) and absence in Kostha can be very easily accessed by its colour.

- Haridra Netra Mutra Twak- means sclera, urine and skin appears yellow in Shakhashrita Kamala. Unlike Kosthashrita Kamala, it is darker yellow in colour. This is because of raised Ranjaka Pitta (bilirubin) in Rakta. This is conjugated bile. It has to enter Kostha (intestine) in normal course, but because of block in Pitta Sthana (liver) due to Kapha, the bile instead of entering into Kostha, undergoes “Vimarga Gamana” and enters Rakta i.e. systemic circulation. As Ranjaka Pitta is yellow in colour it gives rise to yellow sclera, urine and skin.
- Tila Pishta Nibha Varcha- Tilapishta means the paste of white ginjili seeds. The Pureesha (stool) in Shakhashrita Kamala resembles the paste of white ginjili seeds. The colour, consistency and the content of fat in stool are similar to Tila Pishta. This is because Ranjaka

Pitta does not enter into the Kostha (intestine) due to Avarodha in Pitta Sthana i.e. in liver. In normal course Ranjaka Pitta enters the Kostha, colours the Pureesha (stool) to golden yellow. Therefore it is called Malaranjaka Pitta.

- Jwara- Jwara occurs especially few days before the yellow Netra and Mootra are produced. It disappears after Kamala symptoms are established. Fever is an important symptom of the infection usually in viral hepatitis the symptom of Kamala starts with fever.
- Aruchi, Amlapitta- Aruchi means anorexia i.e. tastelessness. Alpaagni means loss of appetite. Ranjaka Pitta (bile) enters the Kostha and digests the fat content of food normally. Because of Ruddhapatha or Avarodha in Pitta Sthana due to Kapha, bile does not reach Kostha (intestine) hence food is not digested, upset of Annavaha Srotas.
- Atopa, Vishtamba- it means abdominal distress with gurgling sound. These symptoms are caused due to upset in digestion. Absence of Ranjaka Pitta in Kostha is the main reason behind this condition.
- Gurunam Hridyen Cha- heaviness in epigastric region.
- Parshav Shoola- due to enlargement of liver Parshava Shoola may occur.
- Daurbalya- fatigue or weakness
- Shwasa- dyspnoea, cough
- Hikka- hiccup

Samprapti: The process of manifestation of the disease by the vitiated doshas is known as samprapti.^[16]

Samprapti of kosthashrita kamala: In Charak Samhita Kamala has been explained as a sequel of Pandu Roga. The patient who is already suffering from Pandu Roga indulges in diet such as Amla, Madhya and Apathya Ahara leads to the production of more quantity of Ranjaka Pitta immediately. The vitiated Ranjaka Pitta burns the blood and flesh giving rise to Pandu Vadana^[17] or Peeta Vadana (Dalhana) i.e. pallor of face and Bheka Varna of skin.

Samprapti involves three stages

a. Pitta Prakopa due to Nidanas: All the Pitta Dosha vitiating Nidana can be divided into 3 groups

1. Ahara Janya Pitta Dosha aggravating Nidana
2. Vihara Janya Pitta Dosha aggravating Nidana
3. Other Pitta Dosha aggravating Nidana.

b. Rakta Dagdhata: Kosthashrita Kamala is Rakta Pradoshaja Vikara and Ranjaka Pitta is by product of Rakta Dhatu.that means the main pathology of Kosthashrita Kamala is restricted to Raktadhatu and Ranjaka Pitta. Here the production of Ranjaka Pitta will be more in quantity, therefore it is called Bahu Pitta Kamala. Prakupit Pitta due to its Ushna, Teekshna Gunas causes Dagdhata of Rakta.

While describing Samprapti of Kosthashrita Kamala, in Astanga Hridaya it is mentioned that ‘Tasya Pittam Asrig Mansam Dagdhwa Rogaye Kalptey’^[19] the literal meaning of Asrig Dagdhwa is burning of Rakta Dhatu. This leads to increased production of Malarupa Pitta, which is the reason for all the cardinal features of Kamala.

As a result of RBC breakdown, bile is formed which is essential for digestion and absorption of fats and function of many enzymes. If its production or excretion is disrupted it is quite harmful to body. It leads to production of “Kutsita Mala” which is characteristic of Kamala.

c. Mamsa Dagdhata: Yakrit is described as Mamsa Vishesha. thus Yakrit can be considered as Mamsa in the pathogenesis of Kamala and Mamsa Dagdhata may be considered as destruction of liver cells which is the pathology behind Kosthashrita Kamala i.e. due to excessive lysis of RBC’S more bilirubin is formed. This Malarupa Pitta or bilirubin circulates through Rasaraktavaha Srotas to all over the body and produces certain signs and symptoms.

Samprapti of shakhashrita kamala: In the term Shakhashrita Kamala, Shakhas refers to one of the Trividharogamargas. It is the Madhyamarogamarga. Ruksha Sheeta Guru Swadu Vyayama Veganighreha Kaphasamurchito Vayu Sthanata Pitta Sheepe Hali.^[18]

Due to above mentioned causative factors, the Vata is vitiated, mixes with the aggravated Kapha Dosha and takes Pitta out of its own seat. Here Pitta refers to Ranjaka Pitta. The word Shakha refers to Rakta, Mamsa and Twak. The Ranjaka Pitta gets name called Swatantra Kamala, Amlapitta Kamala, Ruddapatha Kamala.

Swatantra Kamala: This type occurs independently unlike Kostha Shakhashrita Kamala.

Ruddha Patha Kamala: The word Ruddha Patha means obstruction of channel, there is a block in the channel of Ranjaka Pitta and hence it is called “Ruddha Patha”

Alpa Pitta Kamala:-It refers to the reduction in the quantity of Ranjaka Pitta. There is block in the path of flow of Ranjaka Pitta therefore, it does not enter into Mala Srotas(intestine) and will not appear in Mala(stool). As the Ranjaka Pitta does not enter in Kostha and does not appear in Mala (Pureesha) it is called 'Alpa Pitta Kamala'.

Chikitsa of kamala roga: Signs and symptoms of the disease and a careful examination have to be done to find out certain causes responsible for the disease. Health is a state of equilibrium of Sharira Dhatus. Any change in equilibrium of Doshas results in Dosha Vaishamya that is called as Roga. All the measures by which aggravated vitiated Doshas, Dhatus and Malas are brought back to their normal state and disease is cured constitute the therapeutics of Chikitsa.

Chikitsa of Kosthashakhashrita Kamala

Chikitsa Siddanta

- **Kamalayantu Pittaghanam Pandu Roga Avarodhi Yat^[19]**

Kamalayantu Pittaghanam- The main aim of treatment is to eliminate Ranjaka Pitta, which is elevated in the blood. Therefore, Pittaghna drugs are recommended. The main pathology lies in the blood i.e. Asrigmansa Dagdhwa (excessive haemolysis of rbc). Hence, it should be prevented. Panduroga Avarodhi Yat- the line of treatment is designed in such a way that the drugs used should not cause adverse effects on Pandu Roga, which is the primary causation of this disease. While treating Kosthashrita Kamala care should be taken to restore the blood hence Panduta is relieved.

- **Mridubhu Tiktakee Kamali Tu Virechane^[20]:** A mild Virechana (purgation) is recommended with bitter drugs (Tiktaka Dravya). The bitter drugs possess the properties of 'Pittahar'. Probably such drugs may act as 'Pittarechaka' like that of Katuki.

A. General treatment

➤ Nidana parivarjana

➤ Shodhana

Snehana

Virechana

➤ Shamana- kapha pittahara chikitsa

Shodhana

a. Snehana: Snehana is indicated as Poorva Karma for Virechana in Kamala. The Sneha which is advised internally stimulate gall bladder to release more bile into duodenum to digest the fat. Therefore, bilirubin which is stored in gall bladder is excreted from the body. In this way Snehapana helps in excreting bile from the liver, further it is eliminated from the body through the stool.

Following Ghritas are very effective for snehapana

1. Panch gavya ghrita
2. Kalyanaka ghrita
3. Maha tiktaka ghrita

b. Virechana: Virechana helps in eliminating accumulated Doshas from the body. It is considered as the treatment for Pittaja Vikaras. Kamala is one among them and is described as Virechana Sadhya Vyadhi. Probably that might be the reason to quote-Virechanam Pittaharanam Sreshtham.^[21]

A mild Virechana (purgation) is recommended with bitter drugs (Tiktaka Dravya). The bitter drugs possess the properties of Pittahar and such drugs may act as Pittarechaka.

Shamana: The aim is pacifying the involved Doshas. Causative factors lead to vitiation of Kapha and Vata, since Pitta is carried to places away from Kostha because of obstruction due to Kapha and abnormal movement of Vata. Therefore Kaphahara and Vatahara measures will help to cure the condition.

Chikitsa of shakhasrita kamala: In Shakhasrita Kamala there is Avarodha (shleshmana ruddha margam- obstruction) of Ranjaka Pitta due to Kapha in Pitta Sthana. Here the important cause of Avrodhha is Kapha Dosha because of this Ranjaka Pitta cannot enter Kostha (intestine). This is the main pathology of Shakhasrita Kamala. Therefore, the main aim also should be towards disintegration of Samprapti.

• **Tilapishta Nibham Yastu Varcha Srijti Kamli Shleeshmana Ruddamargam Tat Pittam Kapha Harerjayeta**^[22]

Obstructed Ranjaka Pitta should be relieved by removal of Kapha.

The patient of Kamala, who passes Tila Pista Nibha stool which indicates the obstruction of Ranjaka Pitta due to Kapha Dosha, an important event in the pathology of Shakhshrita Kamala. Therefore the stool will not be coloured by Ranjaka Pitta hence it is white. thus it can be relieved by removal of Kapha situated in Pitta Sthana. Therefore, the drugs which possess Katu, Lavana, Amla Rasa and have Tikshna, Ushana, Ruksha properties, e.g. Maricha, Pippali, Nagar are effective in clearing the channels of Ranjaka Pitta in Shakhshrita Kamala.

The properties of Katu Rasa and Lavana Rasa are enumerated below

Katu Rasa-Guna-Karma: it is Agni Deepaka and Shoshaka (digestion and Absorption), Margashodhaka (clears the channels), Kaphashamaka (alleviates Kapha Dosha), it is Krimihara, Shothahara and Abhishyandhara (relieves Inflammation and congestion) and it has Ushnaguna, hence the channel of Ranjaka Pitta is cleared.

Lavana Rasa- Guna-Karma: it acts as Pachana, Deepana, Chedana, Bhedana, Teekshana, Vikasi, Kapha-Visyandana, Margavishodhana and it has Ushana-Guna. Therefore it helps in clearing of obstruction of Kapha.

- Kaphaharam Pitta Vriddhikaram Samam Chikitsam Shakhshreyya Doshasya Vriddhi Koshtaananyartham^[23] increase the quantity of Ranjaka Pitta at the level of Shakha to bring it to Koshta. There are some procedures to bring the Shakhshrita Dosha to Koshta, which are explained below.^[24]

1. Vriddhi

It means quantitative increase in Shakhshrita Dosha. In Shakhshrita Kamala as Pitta has become Vimarga Gamana to Shakhsh, initially Pittavardhaka Dravyas were used.

2. Vishyandanath: Chakrapani defines it as Vilayana i.e. increase in fluidity. Vriddha Pitta, which is accumulated in Shakhsh Vilayana i.e. liquefied due to Teekshna, Ushna Gunas of Dravyas.

3. Pakath: when Doshas attain Paka they become Laghu. Here Paka can be considered as Laghutva of Kapha, so that they travel towards Koshta.

4. Sarotomukha vishodhanat: as sequel to the above steps due to Paka of Kapha the Srotas becomes clear, facilitating the passage of Vishyanda Pitta.

5. Vayosch-nigrahaat: vata plays a key role in spreading the Doshas from Kostha to Shakha but when Nigrahana of the Vata is attained, Doshas automatically reaches Kostha. Once Pitta reaches to Kostha Mala-Ranjana Kriya is started.

- **Shakhashreya Pittam Swamashyameti^[25]:** The third procedure is, the above said line of treatment should be followed until the shakhagata ranjaka pitta returns to its seat (Kostha) i.e. Swamashaya (own seat of Pitta i.e. Kostha).

- **Aapita Ragat Shakrito Yavat Kostha Margastho Malo Na Tawat Pitta Vardhanam^[26]**
The above said treatment such as Ushna, Teekshana, Lavana, Bhrushamla substances should be continued as long as the Ranjaka Pitta returns to koshtha (in its own seat) and appears in stool (Pureesha). When Ranjaka Pitta has reverted to its place, Pureesha gets its normal color and the symptoms of Kamala subside. Afterwards the treatment should be followed on the line of Koshtha-Shakhasritakamala.

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17. Charakasamhita by agnivesha elaborated 'vidyotini' hindi commentary part ii (reprint year 2011) chaukhamba bharti academy, varanasi, by prof. Kashinath shastri and dr. Gorakhnath chaturvedi, chikitsa sthana chapter16/34; 491.
18. Charakasamhita by agnivesha elaborated 'vidyotini' hindi commentary part ii (reprint year 2011) chaukhamba bharti academy, varanasi, by prof. Kashinath shastri and dr. Gorakhnath chaturvedi, chikitsa sthana chapter 16/125-126; 505.

19. Astangahrdayam of chaukhambha sanskrit sansthan varanasi 13th edition 2000 edited with the vidyotini hindi commentary by kaviraja atrideva gupta chikitsa sthana chapter 16/39; 398.
20. Charakasamhita by agnivesha elaborated 'vidyotini' hindi commentary part ii (reprint year 2011) chaukhamba bharati academy, varanasi, by prof. Kashinath shastri and dr. Gorakhnath chaturvedi, chikitsa sthana chapter 16/40; 493.
21. Charaka samhita of agnivesha revised by caraka and drdhabala, 'vidyotini' hindi commentary by pt. Kasinath sastri and dr. Gorakha nath chaturvedi, chaukhambha bharati academy, varanasi, part i, reprint year: 2013, sutrasthana chapter 25/ 40; 468.
22. Charakasamhita by agnivesha elaborated 'vidyotini' hindi commentary part ii (reprint year 2011) chaukhamba bharati academy, varanasi, by prof. Kashinath shastri and dr. Gorakhnath chaturvedi, chikitsa sthana chapter 16/124; 505.
23. Charakasamhita by agnivesha elaborated 'vidyotini' hindi commentary part ii (reprint year 2011) chaukhamba bharati academy, varanasi, by prof. Kashinath shastri and dr. Gorakhnath chaturvedi, chikitsa sthana chapter 16/128 chakrapani
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25. Charakasamhita by agnivesha elaborated 'vidyotini' hindi commentary part ii (reprint year 2011) chaukhamba bharati academy, varanasi, by prof. Kashinath shastri and dr. Gorakhnath chaturvedi, chikitsa sthana chapter 16/131 gangadhar.
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