

A LITERARY REVIEW OF KAMALA AND ITS TREATMENT W.S.R.
HEPATOCELLULAR JAUNDICEDr. Saurabh Parauha^{*1}, Dr. Pankaj Kumar Mishra², Dr. Sandeep Rajan³ and Dr. Shiv Sagar⁴¹Assi. Proff., Department of Kaya Chikitsa, SSAMC, Aligarh, (U.P.).²Assi. Proff., Department of Panchakarma, SSAMC, Aligarh, (U.P.).³Assi. Proff., Department of Prasuti Tantra Evam Stri Roga, SSAMC, Aligarh, (U.P.).⁴Assi. Proff., Department of Shalya, SSAMC, Aligarh, (U.P.).***Corresponding Author: Dr. Saurabh Parauha**

Assi. Proff., Department of Kaya Chikitsa, SSAMC, Aligarh, (U.P.).

Article Received on 16/04/2017

Article Revised on 07/05/2017

Article Accepted on 28/05/2017

ABSTRACT

Ayurveda is ancient medical science. In our ancient *samhita*, *kamala vyadhi* is briefly described. *Kamala* is *pittaj nantmaj* as well as *raktapradoshaja vyadhi*. *Charakacharya* has considered *kamala* as advanced stage of *panduroga*. *Shushrutacharya* has considered *kamala* as a separate disease and also may be due to further complication of *panduroga*, whereas *Vagbhatacharya* described *kamala* as a separate disease. *Kamala* can be correlated with jaundice in modern medical science. In *kamala vyadhi Acharyas* has explained *Virechana karma*. Modern science has limitations in treating *kamala vyadhi* (jaundice) but ayurvedic literature clearly explained pathology and treatment of *kamala vyadhi* which shows the specificity of *ayurveda*.

KEYWORDS: *Kamala*, Jaundice, *Virechana karma*.**INTRODUCTION**

Ayurveda is an ancient medical science. It has thoroughly described *swatthavritta* as well as treatment of various diseases. *Bhrihatrayee* are three main *samhitas* which explain the basic principles of ayurveda. They are *Charak Samhita*, *Sushrut Samhita* and *Vagbhat Samhita* (*Ashtang Hriday/Ashtang Sangrah*). In our ancient *samhitas*, *Kamala* is briefly described. *Kamala* can be correlated with jaundice in modern medical science. Most of the individual prefer Ayurvedic treatment for *kamala*. In Ayurveda, *Kamala* is the disease related with *pitta dosha*. With Ayurvedic medicines, we can treat and avoid recurrence of *kamala*. The management of *Kamala* and its complications along with drug, diet and lifestyle have been mentioned in Ayurvedic classics. *Charak Acharya* has considered *Kamala* as advance stage of *Pandu roga*. When person with *panduroga* continues intake of *pittakar ahar* then he may develop *kamala*.^[1] *Sushrut Acharya* has considered *Kamala* as separate disease and also may be due to further complication of *panduroga*.^[2] whereas; *Vagbhat Acharya* has described *Kamala* as a separate disease.^[3] Therefore, *Kamala vyadhi* can be caused by three different *samprapti*. In which first two *samprapti* occurs due to *partantra dosh prakopa* and the third *samprapti* by *swatantra dosh prakopa*. *Acharya Chakrapani* has used the term *Bahupitta kamala* as the synonyms of *koshthashkhashrita kamala* and *alpapitta kamala* as the

synonyms of *shakhashrita kamala*. *Kamala* is *pittaj nantmaja vyadhi*^[4] and also *Rakta Pradoshaj vyadhi*.^[5] *Kamala* is compound word (*kam+la*) means lust or desire. In *Kamala* there is no any desire to eat or drink. An individual suffers from severe *Arochaka*, *Avipaka*, *Agnimandya* in *kamala*.

MATERIALS AND METHODS

- *Charak Samhita* with *Ayurved Dipika Commentary* by *Chakrapani*.
- *Sushruta Samhita* with *Nibandhsangraha commentary* of *Shri Dalhanacharya* and *Nyayachandrika Panjika* of *Shri Gayadasachary*.
- *Ashtang Hriday* with *commentaries Sarvangasundara* of *Arundatta* and *Ayurved rasayana* of *Hemadri*.
- *Relevant articles published in various national and international journals*.
- *Harrison's principles of internal medicines*.

Classification of Kamala

- *Charak*^[6]-*Koshthashkhashrit*, *Shakhashrit*, *Halimak*, *Kumbhkamala*.
- *Sushrut*^[2]-*Kamala*, *Halimak*, *Kumbhahvaya* (*kumbha sahva*), *Laghraka* (*laghrakaalasaka*).
- *Vagbhat*^[3]-*Swatantra*, *Paratantra*, *Kumbhakamala*, *Lodhara*, *Aalasaka*.

Kamala Hetu

Charak Samhita-According to Charak Samhita, Kamala is a clinical syndrome which develops after the *pandu*

roga. When a patient of *Pandu roga* takes excessive *paittik ahar-vihar* develops *bahupittakamala*.^[1,7]

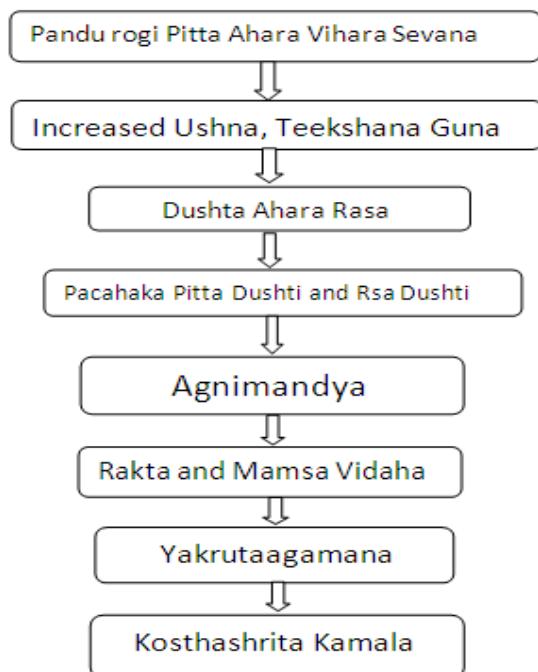
Table 1: Kamala Hetu according to Charak Samhita.

| <i>Bahupittakamala hetu</i> | | | <i>Ruddhapatha kamala hetu</i> |
|---|----------------------|-----------------------|---|
| <i>Aharaj</i> | <i>Viharaja</i> | <i>Manasik</i> | |
| <i>Excessive kshar, amla, lavan, ushna</i> | <i>Ati vyayam</i> | <i>Kama</i> | Excessive intake of <i>ruksha guna ahar</i> |
| <i>Viruddha anna</i> | <i>Ati maithun</i> | <i>Chinta</i> | <i>Sheeta, guru, madhur rasa ahar</i> |
| <i>Vidagdha anna</i> | <i>Diwaswapna</i> | <i>Bhaya</i> | <i>Ati vyayam</i> |
| <i>Asatmya bhojana</i> | <i>Veg vidharana</i> | <i>Krodha</i> | <i>Veg dharan</i> |
| <i>Nishpav, masha, pinyaka, tiltail sevan</i> | | <i>Shoka</i> | |
| | | <i>Upahata chetas</i> | |

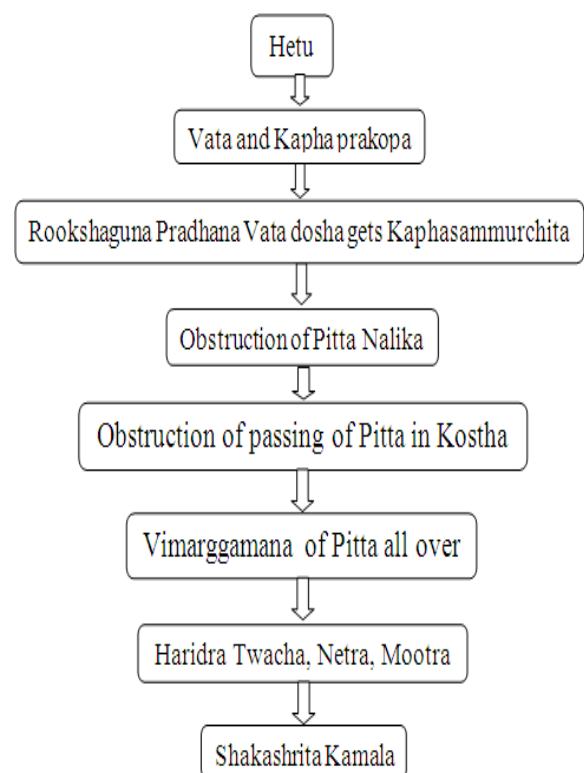
- **Shushruta Samhita**^[2]-According to *Shushruta Samhita*, when patient of *pandu roga* or person affected with other diseases consumes *amlaraspradhan* and *apathyakar ahar* develops *kamala*.
- **Ashtang Hriday**^[3]-According to *Ashtang Hriday*, when *pandurogi* or person with excessive *pitta* consumes *pittakar ahar* develops *kamala*.

Samprapti

Koshthashakhashrita kamala:^[1]

**Samprapti Ghataka**

1. *Dosha-Pitta*.
2. *Dushya-Rakta and Mansa*.
3. *Adhithana-Kostha(Mahasrotasa) and shakha*.
4. *Srotas- Rasavaha srotas, Raktavaha srotas, Annavaha srotas, Purishvaha srotas*.
5. *Srotodushti- Atipravritti, Sanga, Vimarga gamana*.

Shakhashrita kamala^[6]**Samprapti Ghataka**

1. *Dosha – Pitta*
2. *Dushya -Rakta and mansa*
3. *Adhithana- Kostha (mahasrotas) and shakha*
4. *Srotas - Rasavaha, raktavaha, annavaha, pureeshvaha srotas*
5. *Srotodushti – Atipravritti, sanga, vimarg Gamana*

Rupa of Kamala**Table 2: Koshthashkhashrita kamala lakshanas.**

| Sr. no. | Lakshnas | Charaka Samhita ^[1] | Sushruta Samhita ^[2] | Ashtang Hridaya ^[3] |
|---------|-------------------|--------------------------------|---------------------------------|--------------------------------|
| 1. | Haridra netra | + | - | + |
| 2. | Haridra twacha | + | - | + |
| 3. | Haridra mukha | + | - | + |
| 4. | Hidrara nakha | + | - | + |
| 5. | Haridra mutra | + | - | + |
| 6. | Rakta peeta mutra | - | - | - |
| 7. | Rakta peeta mala | - | - | - |
| 8. | Daha | + | - | + |
| 9. | Avipaka | + | - | + |
| 10. | Daurbalya | - | - | - |
| 11. | Sadana | - | - | - |
| 12. | Aruchi | - | - | - |
| 13. | Krusha | - | - | - |
| 14. | Tandra | - | + | - |
| 15. | Balakshaya | - | + | - |
| 16. | Trisha | + | - | + |
| 17. | Indriyadaurbalya | + | - | + |
| 18. | Bhekavarnata | + | - | + |
| 19. | Panduvadana | - | + | - |
| 20. | Haridra mala | - | - | + |

Shakhashrita kamala lakshanas^[6]

Haridra netr, haridra twaka, haridra mutra, sweta varchas, tilpita varchas, atop, visthambha, hriday guruta, daurbalya, alpagni, parshwa arti, hikka, shwas, aruchi, jwara.

Modern View of Kamala^[8]

Kamala can be correlated with Jaundice according to their resemblance in signs and symptoms. Jaundice, or icterus, is yellowish discoloration of tissue resulting from the deposition of bilirubin. Tissue deposition of bilirubin occurs only in the presence of serum hyperbilirubinemia and is a sign of liver disease or, less often, a hemolytic disorder. Slight increase in serum bilirubin is best detected by examining the sclera, which have a particular affinity for bilirubin due to their high elastin content. The presence of sclera icterus indicates a serum bilirubin of at least 3.0 mg/dl. As serum bilirubin levels rise, the skin will eventually become yellow in light-skinned patients and even green if the process is long standing; the green color is produced by oxidation of bilirubin and biliverdin. Another sensitive indicator of increased serum bilirubin is darkening of urine, which is due to the renal excretion of conjugated bilirubin. Bilirubinuria indicates an elevation of direct serum bilirubin fraction and therefore the presence of liver disease. Increased serum levels occur when an imbalance exists between bilirubin production and clearance. Bilirubin is the yellow breakdown product of normal heme catabolism caused by body's clearance of aged RBCs which contain haemoglobin. Bilirubin works as cellular antioxidant. Haemoglobin is broken down to heme and globin portion. The globin portion is a protein that breaks down into amino acids and plays no role in the pathogenesis of jaundice. The heme, on the other hand, undergoes

oxidation reaction catalysed by the enzyme oxygenase to give biliverdine, iron and carbon monoxide. Biliverdine yield a yellow pigment called bilirubin (unconjugated). In the liver, the bilirubin is conjugated with glucuronic acid to give conjugated bilirubin which is water soluble that can be excreted. Bacteria in the intestine convert the bilirubin into urobilinogen. This urobilinogen is then either converted into stercobilinogen or excreted in the feces or it is reabsorbed by the intestinal cells and taken to the kidneys via the blood to be excreted in the urine. In this way, normally the liver metabolizes and excretes the bilirubin in the form of bile. However, if there is disruption in this normal metabolism production of bilirubin, jaundice may results.

Sadhyasadyatwa

According to *Charaka Samhita*, initial stage of kamala is sadhya. On long standing becomes kriccha sadhya and *Kumbha kamala^[11]* occurs. *Kumbha kamala* presents with further symptoms like *krushna-pita shakruta mutra, raktamutra, shotha, chardi, daha, aruchi, trushna, anaha, moha, nasht agni* is *asadhya*. *Kumbha kamala* with *chardi, aruchi, hrullas, jwara, klam, swasa, kasa, atisara* considered as *asadhya*. According to *Sushruta Samhita*, *kumbha savha^[9]* is type of *kamala* with *shopha* and *parvabheda*. *Ashtang Hridaya* explained that untreated *kamala* leads to the next stage called *kumbha kamala* which is *kricchasadya^[13]*.

Kamala Chikitsa

The management of disease according to ayurveda can be divided into three parts.

1. *Nidana parivarjan*
2. *Shodana* (purification therapy) and *shaman* (palliative therapy)

3. Pathyapathya

In Ayurvedic texts scholars with their treasure of knowledge and experience have scientifically explained the principles of management of *kamala*.

Koshthashakhashrita kamala chikitsa

In management of *Kamala*, Acharya Charaka has mentioned *virechana*^[1] (purgation therapy) with *mridu* and *tikta dravyas* are advised. Here we think about *Bahupitta kamala* mainly. Acharya Sushruta mentioned drug and dieted regimens. Acharya Vagbhata mentioned drugs which pacify *pitta* and drugs which do not interfere with *panduroga* should be used.

Shodhana chikitsa

Kamala vyadhi itself is chronic; hence involvement of *Dhatu's* is seen. In *Kamala pitta dosha* is vitiated by its *ushna, tikshna guna* and leads to *Rakta dhatukshaya*. Along with this because of *drava guna* accumulation (*sanchay*) of *pitta dosha* occur. In this state if we give *tikshna shodhan*, it leads to vitiation of *vayu*. So there is need to eliminate *sanchit dosha* and to avoid *dhatukshaya mridu shodhana* i.e. *mridu virechan* (mild purgation) is useful in *Bahupitta kamala*. There treatment of choice for *kamala* is *mridu-virechana* as *virechana* is best therapeutic procedure for *pittadosha*.

Virechana Karma

Virechana therapy is a type of *panchkarma*. *Virechana* means administration of purgative for the purpose of eradicating *dosha* from the body. It is mainly done to eradicate the aggravated *pitta dosha* in the body. Before *Virechana karma*, *Snehana* should be done as *purvakarma*. For *snehapana* medicated *tiktarasatmaka ghrita* should be used.

Ghrita used in Kamala vyadhi for snehapana^[10]

1. Panchgavya Ghrita.
2. Draksha Ghrita.
3. Mahatiktak Ghrita.
4. Haridradi Ghrita.
5. Dadimadi Ghrita.
6. Kalyanaka Ghrita.
7. Danti Ghrita.
8. Katukadi Ghritam.
9. Pathya Ghrita.

With the help of *Vridhhi, Vishyandan and Pachana (pak) siddhanta*^[11] Ghrita has capacity to bring *dosha* in *koshtha* from *shakha*. That's why in *kamala snehapana* with medicated *ghrita* is useful in *Kamala*. *Swedana* is contraindicated in *Kamala*.^[11]

In *Kamala*, *virechana* should be done by *tikta* and *mridu dravya*, following are advised by Charaka in *Panduroga chikitsa*.^[12]

1. Gomutra and Godugdha in equal quantity.
2. Only Godugdha.

3. *Eka anjali Mrudwika prayoga* (8 pala nearly about 300 gm.)
4. *Aragwad Phalmajja* and *Ikshurasa*.
5. *Triphala kwatha* or *Guduchi Swarasa* or *Daruharidra swarasa* or *Nimbpatra swarasa* with *madhu* in the early hours.
6. *Gomutra Haritaki*.
7. *Trivrita Churna* (one part) and *Sharkara* (two parts)
8. *Amalaki Swarasa* and *Madhu* at morning.

Above mentioned *yogas* should be used according to *prakriti, dosha, dushya, bala, kala* and *agni*. They should be used in small quantity but used repeatedly. After *mridu virechana*, *Anulmana* of *sanchit dosha* occurs and *manda agni* becomes proper or normal.

Shamana chikitsa

After *virechana karma*, *shamana* drugs are to be administered. They can be given as single drugs or compound drugs. The actions of *shaman* drugs were *pittahara* or *pitta rechana*, *yakrita uttejaka* (liver stimulant), *dipana* (appetiser), *raktashodhana* (blood purifier), *srotoshodhana* (channel purifier).

Treatment of shakhashrita kamala^[6]

Ruddhapatha kamala needs different principle of management, since *malarupa pitta* is in *shakha* and *virechana* will not be effective till *dosha* are brought into *koshtha* (*mahasrotas*). Here *kapha* which obstructs the path of *pitta*, should be alleviated. The medicines which alleviate *kapha*, like *tittara* (partridge), *daksha* (cock), *sushka mulaka*, *kulattha yusha*. *Matulunga swarasa* with honey, *pippali*, *marich* and *shunthi* have to be given. By giving these drugs *pitta* is brought in *kostha* and then *pittahara chikitsa* should be given.

Duration of treatment (Mukta kamala lakshana)^[6]

Treatment should be continued till the stool of patient acquires the colour of *pitta* and *vayu* is alleviated. When *pitta* reaches *swasthana* (*koshtha*) and patient is relieved of *upadrava*, earlier line of treatment should be resumed.

Management of kumbhakamala

Kumbha kamala is an *asadhya* or *kriccha sadhya vyadhi*. *Charakacharya* has not mentioned any specific treatment.

Sushrutacharya^[2]

1. Swarnmakshika+Gomutra,
2. Shilajatu+Gomutra,
3. Mandura+Gomutra + Saindhava lavana for 1 month,
4. Bibhitaka lavana.

Vagbhatacharya^[13]

1. Shilajatu + Gomutra for 1 month,
2. Swarnmakshik + Gomutra for 1 month.

DISCUSSION

In Ayurvedic literature *kamala* is described as *pittaj nantmaja* and *raktapradoshaj vyadhi*. Acharya Charaka describes that *kamala* advance stage of *pandu roga*, but Acharya Sushruta has mentioned it as a complication of *pandu roga* as well as other disease also, where Acharya Vaghata also described it as a separate disease. All most signs and symptoms of jaundice are much more similar to *kamala* ailments of Ayurveda in various aspects. The classification of *Kamala* is based on origin and pathology. It is mainly of two types *koshdashakhashrita kamala* and *shakhashrita kamala*. *Koshdashakhashrita kamala* arises due to excess break down of erythrocytes, it is also called *bahupittakamala* because increase the production of *pitta*. *Shakhashrita kamala* arises due to intrahepatic cholestasis, here the cause of *kamala* is only reduced excretion of bilirubin so called *alpapitta kamala*. Both types of jaundice are very much close to hemolytic and hepatocellular jaundice of modern medical science.^[14] Since liver is the largest gland, main site of metabolism and detoxification, the diet should be easily digestible and waste materials are better removed from intestine earlier during jaundiced condition. So Ayurvedic treatment contains those medicine that facilitate removal of waste substance from the gutt, kidney and provide instant energy. The treatment of *koshdashakhashrita kamala* must start with purgation therapy. The basic theory is that no burden be placed on the liver and for that, *virechan* therapy is recommended. In the process of jaundice development, excessive bilirubin leads to increased production of stercobilin. The *virechana* procedure with prior *snehana* helps to remove the excess stercobilinogen and helps in reducing hyperbilirubinemia and ultimately jaundice. The excess removal of stercobilinogen leads to increase the diffusion process of bilirubin to produce stercobilinogen. Excessive bilirubin can be thus diffused into stercobilin and urobilinogen and again removed by the process of *virechana karma*. In case of jaundice, the *nitya virechana* thus helps to remove the excess bile from the body. *Shakhashrita kamala* needs different principle of management, since malarupa pitta is in *shakha* and hence *virechana* will not be effective. So by giving the medicines which alleviate kapha and *pitta* is brought in *koshtha* and then *pittahara chikitsa* should be given.

CONCLUSION

In Ayurvedic text, *kamala vyadhi* is thoroughly described. It helps us to understand the disease pathology very clearly. In the treatment part that is in *chikitsa sutra* of *Shakhashrita kamala* Acharya Charaka has explained *mrudu virechana karma*. *Virechan karma* shows significant reduction in total bilirubin level and also helps in removal of excessive stercobilinogen from the body as per modern science. Modern science has limitations in treating the *kamala vyadhi* (jaundice) but Ayurvedic literature clearly explained pathology and treatment of *kamala vyadhi* which shows the specificity of Ayurveda. But *shakhashrita kamala* needs different

principle of management, *virechana* is not effective in it. So by giving the medicines which alleviate *kapha* and *pitta* is brought in *koshtha* then *pittahara chikitsa* should be given.

REFERENCES

1. Vaidya Yadavaji Trikamji Acharya, Charak Samhita, Chakrapani Tika, Reprint, 2013; 528.
2. Vaidya Yadavaji Trikamji Acharya, Sushruta Samhita, Nibandhsangraha and Nyayachandrika Panjika tika, Chaukhanba Prakashan, Varanasi, Reprint, 2014; 729.
3. Hari Sadashivshashtri Paradkar, Ashtang Hriday, Sarvanga sundara and Ayurved Rasayana tika, Chaukhanbha Prakashana, Varanasi, Reprint, 2014; 519.
4. Vaidya Yadavaji Trikamji Acharya, Charak Samhita, Chakrapani Tika, Chaukhanbha Prakashana, Varanasi, Reprint, 2013; 114.
5. Ibid, 179.
6. Ibid, 528-532.
7. Ibid, 527.
8. Anthony S. Fauci [et al], Harrison's principles of internal medicine, 17 th edition, 1: 261
9. Vaidya Yadavaji Trikamji Acharya, Sushruta Samhita, Nibandhsangraha and Nyayachandrika Panjika tika, Varanasi, Chaukhanba Prakashan, Reprint, 2014; 730.
10. Vaidya Yadavaji Trikamji Acharya, Charak Samhita, Chakrapani Tika, Chaukhanbha Prakashana, Reprint, 2013; 529.
11. Ibid, 88.
12. Ibid, 180.
13. Hari Sadashivshashtri Paradkar, Ashtang Hriday, Sarvanga sundara and Ayurved Rasayana tika, Chaukhanbha Prakashana Varanasi, Reprint; 2014; 704.
14. Prasad Kmlshwar [et al], Demographical Observation Of Shakhashrita Kamala (Hepatocellular Jaundice) During Upshayatmak Study Of Navayas Lauha Churna, International Journal of Ayurvedic and Herbal Medicines, 2015; 5(3): 1841-1848.