ABSTRACT
The scientific taxonomy of disease make easy to study, recognition of etiology, diagnosis and planning of treatment of any ailment. The traditional cataloging of diseases have been described in traditional system of medicine is very scientific as well as practical also. Like classification of other ailment, Kamala has been classified basically in various groups like Koshthashrita (haemolytic jaundice) & Shakhashrita (hepato-cellular jaundice), Swatantra (independent) and Partantra (manifest as a complication of another disease), Bahu-pitta (due to excess generation of bilirubin) and Alp-pitta (due to retention of bilirubin). But in this article, the elaborated taxonomy of Kamala is described on the behalf of four types of Samprapti i.e. Vidhi, Vikalpa, Pradhanya and Bala which have great importance in diagnosis and management of Kamala ailment.

Everyone knows that abolition of etiology and cleavage of pathological chain of ailment is the steady and complete healing of disease. The treatment protocol of Kamala is entirely based on this theory. There are two segment of treatment of kamala, first is nonspecific which is common and applicable for all kinds of Kamala and second is specific treatment which is explicit for definite types of Kamala. In Ayurvedic pharmacology, the mode action of drugs and how to cleavage the pathogenesis of ailment is not described but here it is illustrated very clearly and in a mannered way. The Navayas lauha churna has three groups of herbal drugs i.e. Trimada, Trikatu and Triphala and one group of Lauha bhasma. Each groups of drugs of this medicine; where (at which step of pathogenesis) and how to act and cleavage the pathogenesis of Shakhashrita kamal (hepato-cellular jaundice) are narrated with scientific, logical and evidence based discussion and as well as institution of liaison with contemporary science.

KEYWORDS: Koshtha and Shakhashrit kamala, Bhenkvarna, Bahu-pitta and Alp-pitta, Vidhi and Vikalp samprapti.

INTRODUCTION
There is a physiological equilibrium established in body in between production & excretion of mala to maintain the healthy life. Like above, if any physiological & pathological conditions arise, to either enhance the production of abnormal Pitta or reduced the excretion of abnormal Pitta from the body to turn out a kamala disease. Hence kamala is a result of amassing of abnormal Pitta (bilirubin) in the body and characterized by Bhekvarna (yellowish discoloration) of skin and others. The word Kama in Kamala has a special meaning i.e. ‘loss of appetite’ in the place of general meaning. Hence who is suffered from anorexia is known as Kamala.

Most clinical features of jaundice are much more analogous to Kamala ailment of traditional system of medicine in diverse aspects. The textual and pathological classification of Kamala has a vast significance in diagnosis and healing of
disease. On the whole, there are two types of Kamala; Koshthashrit and Shakhashrit. Koshthashrita kamala arises due to excess breakdown of erythrocytes, it is also called Bahupitta kamala because it increases the production of Pitta. Second Shakhashrita kamala arises due to obstruction in Pittavaha srotas (intrahepatic cholestasis), here the cause kamala is only reduced the excretion of bilirubin, so called Alp-pitta kamala. Both types of jaundice are very much close to the haemolytic and hepato-cellular jaundice of contemporary science.

AIMS AND OBJECTIVES

The accessible scientific and inherent essential review is done with following objectives:

1) To make available a scientific and conventional taxonomy of Kamala disease.
2) To ascertain the healing principle of Kamala ailment.
3) To endeavor to establish the breakdown of pathogenesis of Shakhashrit kamala by Navayas Lauha Churna.
4) To advocate a liaison in ancient and modern view about facts of the article.

MATERIAL AND METHODS

Taxonomy of the Kamala

Kamala ailment can be classified on account of the following points-

<table>
<thead>
<tr>
<th>A. On the basis of Ayurvedic texts</th>
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<td>1) Koshthashrita kamala</td>
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<td>1) Kamala</td>
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<td>3. According to Acharya Vagbhata &amp; Madhukosha[2]</td>
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<td>1) Swatantra (independent) Kamala</td>
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<th>B. On the basis of Samprapti (Pathogenesis)</th>
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<tr>
<td>1. Vidhi samprapti:</td>
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<td>1) Koshthashrita kamala</td>
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<td>2) Shakhashrita kamala</td>
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| 2. Vikalpa samprapti:                     |
| 1) Bahu-pitta kamala                     |
| 2) Alpa-pitta kamala                     |

| 3. Pradnya samprapti                     |
| 1) Swatantra kamala                     |
| 2) Partantra kamala                     |

| 4. Bala samprapti                        |
| 1) Mridu (easily curable)- Koshtha & Shakhashrita kamala. |
| 2) Daruna (chronic and non-easy curable form of jaundice)- Kumbha kamala, Halimaka and Panaki. |

C. On the basis of Nanatmaja and Samanyaja ailments

1) Nanatmaj (bahu-pitta) kamala.
2) Samanyaja (alp-pitta) kamala.

The pathological and traditional textual classification of kamala is not different, if they have difference though only in the account of classification because every type of Kamala can be grouped into textual classification of Kamala.

Treatment Protocol

In the treatment protocol of Kamala ailment, the following points should be kept in mind before write the prescription:

1) General treatment
   a) Prevention and removal of etiology

   This is the first and most important treatment part of any disease. Because, the origin of diseases are not possible without causative factors. [3]
   
   b) Mridu virechan with Tikta dravya

   Just like above explanation, normally Pitta come in G.I.T. and some moiety of it reabsorb into circulation and some part of it passes out through stool. If the patient take the Virecha medicine and go for one or two fresh motion, then the maximum Pitta remove through stool because fecal matter does not stay in G.I.T. for longer period and reduce the re-absorption of Pitta[4]

2) Specific treatment
   a) Koshthashrita kamala (haemolytic jaundice)

   In this type of kamala disease only Pitta shama treatment should be given because this disease arose due to the vitiation and excess break
down of Rakta & Mansa dhatus by abnormal Pitta. Hence Ghrita (medicated Ghrita) is the great Pitta shamaka remedy so that should be given in this type of Kamala roga. [5]

In modern medical science, the cause of destruction of R.B.Cs. is mainly due to dyserythropoiesis and hypersplenism. The probable clarification may be that, due to excess break down of erythrocytes, deficiency of R.B.C. takes place and body required to increase the production and maturation of erythrocytes for maintaining the crisis of erythrocytes. For production & maturation of R.B.C, the essential component likes cyanocobalamin, folic acid & thiamin etc. are present in Ghrita in rich amount therefore advise the Ghrita preparation in this type of Kamala roga.

b) Shakhshastra kamala (Samanyaja pittaja kamala)
1. Deepana & Pachana

Improve the Agnimandya by utilization of Deepana & Pachana medicines.

2. Removal of obstruction

The origin of this type of kamala due to the obstruction of Pittavaha srotasa within the liver by abnormal Kapha and then aggravating Vata spread the abnormal Pitta into the Shakkha & provide the Haridravarna. Therefore our treatment plan should be focused on the removal of obstruction of Kapha & shama of Vata dosha,[6]

There are five factors responsible for returning the Dosha from Shakha to Koshtha which are illustrated as; 1- Vridhya (Increase the aggressiveness and motility of Doshas by utilizing the Teekshna, Ushna & Katu drugs), 2- Vishyndnata (increase the fluidity of Doshas by lyses of Doshas), 3-Pakata (Ama dosha is sticky in nature, so it does not pass in Srotasa easily after converting into Pakva dosha, they become Laghu and unstuck and therefore readily come into Mahasrotasa), 4- Srotomukha vishodhanata (removal of obstructions), 5-Vayoshch-nigrahata (reducing the aggressiveness of Vata dosha). [7]

On the basis of this pathogenesis and above principle, Katu, Teekshna, Ushna, & Lavana should be given until the stool comes to normal color & aggravating Vata is reduced.

**Probable mode of action of Navayanas churna on Shakhshastra kamala**

![Diagram](https://example.com/diagram.png)

**Illustration of mode of action of Navayanas lauha churna**

1. Trimada (Musta, Vidanga & Chitraka)

    Musta is the Katu in Rasa, Laghu in Guna and Sheeta in Virya while Vidanga & Chitraka are katu in rasa and Ushna in Virya and used in Agnimandya due to their properties of Deepana & Pachana. Now it is clear that all these drugs are improve the Mandagni and Ama condition of Kamala roga.

2. Trikatu (Shunthi, Maricha & Pippali)

    Trikatu is the Katu in Rasa and Vipaka, Ushna in Virya and Vata-kapha shamaka. All these drugs act as mucolytic agent so they lyses and clear the accumulated Ama kapha in lumen of Pittavaha srotasa and facilitate the excretion of Pitta in Annvaha srotasa.

3. Triphala (Amalaki, Haritaki & Vibhithaka)

    Individual drug has the broad spectrum of functions like Deepana, Vatanulomana & Bhedana etc. But commonly Triphala is used as a Mirdu virechaka like mentioned in Bhavaprakash nighantu. Due to Rechaka property of Triphala, reduce the chance of re-absorption of Malaranjaka pitta in the circulation and improves the disease.

4. Lauha bhasma

    According to Rastarangani, Lauha bhasma is a great medicine for Shakha & Koshtha-ashrita
increased Pitta. How to reduced Pitta of Shakha, it is not readily explained in texts. But indirectly it is mentioned by Acharya Charaka i.e. the procedure to bring the Doshas from Shakha to Koshtha as mentioned above.

RESULT AND DISCUSSION

The literary meaning of Koshtashrita is something dwelling in Koshta, who is something i.e. Pitta (Bilirubin). So, in this type of kamala ailment; secretion of bilirubin via liver into Kostha (gastro-intestinal tract) does not impede. That is why it is called Koshtashrit kamal. It is also known as Bahupitta kamala because here increase the total quantity of Pitta in the body tissues and fluids due to the excess production of abnormal Pitta by increased break down of Rakta dhatu (Erythrocytes) and Mansa dhatus (Myoglobin & catalase etc.) by excess intake of Pitta-prakopak diets. In this case, kamala arises after the pandu as a secondary disease, so Koshtashrita kamala is also called Partantra kamala. In this kamala, only Pitta dosha is responsible for manifestation of kamala therefore it may be grouped under the Pittaja nonatmaja kamala.\[9\]

From the above evidences, it may be strongly correlated with the haemolytic jaundice which is a most common cause of predominantly unconjugated hyperbilirubinemia. This form of jaundice can result from haemolysis), decreased hepatic uptake and reduced conjugation of bilirubin.

While, the Shakhashrita kamala is a result of retention of Pitta into the Shakha (dhatus) due to obstruction of Pittvaha srotasa by abnormal Shleshma rather than excess production of abnormal Pitta (bilirubin). So it is termed as Alp-pitta kamala and this type of kamala originate independently so also called Svatantra kamala. This kind of kamala can be grouped into Pittaja samanyaja Kamala roga because other factors like Shleshma and Vata doshas are also responsible rather than Pitta dosha. \[10\]

Shakhashrita kamala may be resembled with the intra-hepatic cholestasis (hepato-cellular jaundice) because today we know that intrahepatic cholestasis only cure by medicine not by surgery rather surgery may worse the condition. In other hand, the post hepatic cholestasis or post hepatic obstructive jaundice only cures by surgery not by medicine. In Ayurvedic text, extremely honest physician Acharya Charaka, in the treatment of Shakhashrita kamala, has given the indication of medicine not the surgery, if he understands the requirement of surgery in this disease, though he writes that this patient referred to the Dhanvantari Sampradaya (surgery deportment) like other diseases i.e. Shotha, Raktaja gulma and Ashmari. On the above evidence we can say that Shakhashrita kamala is the intrahepatic jaundice not the post hepatic obstructive jaundice.\[11\][12]

The Halimak ailment is a advance stage of kamala and caused by Vata and pita Doshas, which is characterized by discoloration of green and blackish yellow and suffers with diminution of strength & enthusiasm, drowsiness, loss of appetite and lack of libido etc. But there is a big query, how to green color develop in this disease.\[13\]

When the abnormal Pitta gets accumulated in the body due to improper excretion, then the color of skin and whole body becomes greenish yellow. According to text, Pitta has all color except Aruna & Shukla (black & white), it explain that why the Kamal ailment has greenish yellow discoloration.\[15\]

The color of body and skin in patient of jaundice depends upon the ratio of bilirubin & biliverdin in the blood which are yellowish & greenish in colour respectively, but after prolonged cholestasis, the bilirubin is oxidized into biliverdin and manifest as a greenish yellow discoloration of body.

Schematic representation of entero- hepatic cycle of bilirubin

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After discussing the pathological classification, now we shall discuss about the Samprapti vighatana (i.e. chikitsa) of kamala under the treatment protocol on the basis of their respective pathogenesis. Treatment plan may be classified into two groups namely general and specific.

**The schematic representation of entero-hepatic cycle of bilirubin**

(*C- Cytoplasm of hepatocyte, *SER- Smooth endoplasmic rericulam, GT- Glucuronosyl transferase, BMG- Bilirubin monoglucuronide, BDG- Bilirubin diglucuronide, B-Bilirubin).

General treatment comprises of, first the prevention of the etiology, which is the most important part of the disease and second is the Mridu virechana karma. As discussed above we know that through entero-hepatic circulation some moiety of bilirubin reabsorb into the blood. If the patients takes the Virechaka medicine and go for one or two fresh motion, then the maximum Pitta is removed through stool by breaking the entero-hepatic circulation. Hence, this treatment should be given in both kinds of jaundice.

Second treatment is the specific treatment which is oriented with kinds of kamala. In Koshthashrita kamla (haemolytic jaundice) only Pitta shamaka treatment should be given because this disease arose due to the vitiation & excess break down of Rakta & Mansa Dhatus by abnormal Pitta. Hence Ghrita (medicated Ghrita) is the great Pitta shamaka remedy so that should be given in this type of Kamala roga.[13]

In modern medical science, the cause of destruction of R.B.Cs. is mainly due to dyserythropoiesis & hyperspleenism. The probable clarification may be, due to excess break down of erythrocytes, deficiency of R.B.C takes place and body required to increase the production and maturation of erythrocytes for maintaining the crisis of erythrocytes. For production and maturation of R.B.C, the essential components like cynocobalamine, folic acid and thiamin etc. are present in Ghrita in rich amount therefore advise the Ghrita preparation in this type of Kamala roga.

The Shakhashrita kamala produced basically due to the Mandagni and obstruction of Pittavaha srotasa by Kapha doshaa. So our treatment plan should be based of its pathogenesis. In this type of patient first give the Deepana and Pachana dravya for improving the Mandagni and as well as remove the obstruction of Kapha by using the Tikshna, katu drugs. [8]

As discussed earlier here we will also discuss about the probable mode of action of Navayas churna with Madhu as Anupana for the management of hepato-cellula jaundice. It consists of three groups of drugs i.e. Trimada, Trikatu, Triphala and Lauhabhasma. Each groups having their specific site and action at which they act. Trimarda is the great Deepana and Pachana, and improves the Mandagni and Ama condition. Trikatu is the Katu, Ushna tikshna and Vata kapha samaka. All drugs of this group having the action of a mucolytic agent and they lyses and clear the accumulated Ama kapha in lumen of Pittavaha srotasa and facilitate the excretion of Pitta in Annvaha srotasa. Triphala is the Mridu virechaka and improve the bilirubin concentration in blood by interruption the entero-hepatic circulation. According to Rasatarangni lauha bhasma is the great medicine of Shakh and Koshtha-ashrita increased Pitta but how to reduce the Pitta of shakha, it is not readily explained in texts. But indirectly we can think that the Lauha bhasma follow the procedure to bring the Doshaa from Shakha to Koshtha as mentioned above.
Navayas lauha churna with Madhu was extremely significantly effective in improving the symptoms of Haridra varna (discoloration of sclera, mucous membrane and others structures) Mutra varna (yellowish discoloration of urine), Shakrta varna (discoloration of faeces), Aoipaka (indigestion) Avipaka (indigestion). Highly Improvement in laboratory value likes total bilirubin including direct and indirect bilirubin, ALT and liver size, and more significant improvement was also noted in AST and ALP. [16]

CONCLUSION

The textual and pathological taxonomy of Kamala is very scientific and similar to taxonomy of jaundice of contemporary science in various aspects. The treatment protocol of kamala is also awfully precise and based on etiology and pathology of ailment and the principle of treatment; break down of pathogenesis is an ideal treatment and is explained by Navayas lauha churna by breaking the pathogenesis of Shakhasrit kamala ailment.

REFERENCES

5. Ashtanga Hridaya (A Compendium Of The Ayurvedic System) Of Vagbhata With Commentaries Of Sarvangasundra Of Arunadatta & Ayuvesarasayana Of Hemadri, Annovated By Anna Moreshwar Kunte & Krsna Ramachandra

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10. Ibid

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