A REVIEW OF AYURVEDIC HEPATOLOGY AND INFERENCES FROM A PILOT STUDY ON KALMEGH (ANDROGRAPHIS PANICULATA) INTERVENTION IN HEPATIC DISORDERS OF VARIABLE ETIOLOGY

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Abstract

Ayurveda has many propositions to hepatobiliary diseases which are akin to modern understanding of hepatology. Besides elaborate clinical descriptions of various hepatic conditions, Ayurveda further proposes many herbal, herbomineral and dietary interventions to prevent and to manage such conditions. Kalmegha (Andrographis paniculata) is a trusted drug from Ayurvedic repertory which is variously used in many hepatic conditions. We had gone through a pilot study to evaluate its role in various hepatic conditions and found that it has a beneficial role in hepatocellular pathologies.

Annals Ayurvedic Med. 2012: 1 (1 & 2) 44-52

Key words: Hepatology. Jaundice, Kalmegh.

Introduction:

Hepatology is the branch of medicine which deals with the diseases of liver and biliary tract. Never in the history of mankind the liver has had been exposed to serious damage as it is now. Indiscriminate use of systemic drugs like tetracycline, paracetamol, antitubercular drugs, oral contraceptives of hormonal origin, chemicals used as food preservatives and agrochemicals are threatening the integrity of the liver. Further addiction to alcohol and other such preparations have aggravated the problem. Undernutrition and malnutrition are important causes of damage of liver in the developing countries due to scarcity of food. Thus liver is not expected only to perform a wide range of physiological functions, but it has also to protect itself against the environmental hazards, toxic medicines and chemicals. Insipite of tremendous scientific advancement in the field of hepatology in recent years, more problems have been added rather than solved. Hence hepatology has emerged as a major discipline of medicine with in a short period.

The major clinical manifestation of liver disorders is jaundice. Insipite of having extra-ordinary capacity of regeneration in this organ, a slight ignorance may lead to fatal complications with grave prognosis. There is no rational therapy yet available in western conventional medicine for the cure of these diseases. Usually supportive measures are practiced. Although the entity of liver as an organ and its function is not elaborated in Āyurvedic texts, a number of clinical conditions simulating different liver diseases as known today are described in Āyurvedic classics and subsequent writings. In order to organize and to further develop this area of clinical medicine, it has been felt necessary to collect and codify the relevant literature from Āyurvedic texts and to treat the same critically to evolve a viable discipline of Clinical Hepatology in Āyurveda so that the useful therapeutics available in Āyurveda may be fruitfully generalized and extended to the care of patients suffering from different liver diseases. The present review will highlight the conceptual background and scope of its future clinical applications.

Āyurvedic literature replete with various recent references which testify the effect of Āyurvedic medications for the treatment of liver disorders such as Kāmalā, Yakṛtgata doṣa, Yakṛt Vṛddhi and Yakṛddālyudara.

Classification of Liver Diseases:

Āyurvedic literature has description of different liver diseases in different contexts. They can be classified as follows -

1. Pratyakṣa (Direct):
   (a) Yakṛt vṛddhi (Hepatomegaly)
   (b) Yakṛddālyudara (Cirrhosis of Liver)
   (c) Yakṛtgata Doṣa (Chronic Hepatitis)

2. Apratyakṣa (Indirect):
   (a) Kāmalā (Jaundice)
   (b) Halīmaka (jaundice complicated with fever)
   (c) Pānaki (Jaundice complicated with Diarrhoea)
In Ayurveda distension of abdomen (Udara vrddhi) caused by the functional derangement of liver (Yakrta-Pradusti) is known as Yakrddalyudara. This disease in Ayurvedic literature has been described along with Plihodara in the chapter of Udara Roga. Bhāva Prakāśa has mentioned an independent disease known as Yakṛta-vṛddhi in addition to Yakṛddalyudara. The relevant literature is being reviewed here to highlight the concepts of these diseases.

DIRECT LIVER DISEASES: There are number of direct liver diseases in Ayurveda, which are described as here under.

Yakṛta vṛddhi (Hepatomegaly):

Caraka in the 19th chapter of Sūtra Sthāna and 13th chapter of Ĉikitsā Sthāna has enumerated 8 types of Udara-Roga, Yakṛddalyudara has been mentioned indirectly there. Similarly Suśruta and Bhāvaprakāśa have also included this disease indirectly in eight types of Udara Roga.

Caraka Saṃhitā: In Caraka Saṃhitā a reference is available regarding the enlargement of Yakṛta (liver). After describing the symptomatology of Plihodara it has been mentioned that the causes, symptoms and treatment of enlargement of liver which is situated in right side of the abdomen are similar to that of Plihodara. While describing the treatment of Plihodara it has been further referred that the treatment of the disorders of Yakṛta (liver) are similar to that of Plihodara.

Suśruta Saṃhitā and Others: Suśruta, first time gave the specific nomenclature to this disease as Yakṛddalyudara and briefly defined this disease. It has been mentioned that the disease caused by Pradushti of Yakṛta which is situated in right side is known as Yakṛddalyudra. But specific symptomatology and treatment of this disease have not been described except mentioning that in this disease Śirāvedha of right arm should be carried out.

No further new contribution seems to have been made in the knowledge of this disease by the authors of Aṣṭāṅga Śaṅgraha, Aṣṭāṅga Hṛdaya, Madhava Nidāna and Śaṅgadhara Saṃhitā, who have mostly carried over the knowledge of previous texts.

Bhāva Prakāśa: The contribution of Bhāvaprakāśa in increasing the knowledge base of hepatology is worth mentioning. In this book a specific chapter (33rd, Madhya Khaṇḍa Ĉikitsā-Prakaraṇa) on Plihāyakṛdrādhikāra in addition to the general chapter (41st Madhya Khaṇḍa Ĉikitsā Prakaraṇa) of Udarādhiṇḍa has been dealt with. From the descriptions available in these chapters it seems that the enlargement of the spleen or liver which do not cause enlargement of the abdomen may be termed as Plihā-vṛddhi and Yakṛta-vṛddhi. Both these clinical entities have been described in the chapter of Plihāyakṛdrādhikāra. The enlargement of the spleen or liver if causes enlargement of the abdomen also, then these clinical entities are known as Plihodara and Yakṛddalyudara respectively and these have been dealt with in Udarādhiṇḍa.

It is obvious from the foregoing that though the Plihā-vṛddhi and Plihodara have been described in detail yet the indirect attention has been paid to the causes and symptomatology of Yakṛt-vṛddhi and Yakṛddālyudara in Ayurveda literature. Therefore, on the basis of symptoms and signs of Plihā-vṛddhi and Plihodara, symptoms and signs of Yakṛt-vṛddhi and Yakṛddālyudara may be constructed, as follows:

Symptoms and Signs of Yakṛt-vṛddhi (Hepatomegaly): In addition to the enlargement of Yakṛt (liver) the patients of Yakṛt-vṛddhi have the symptoms of Kapha and Pitta dosha. In addition to these, the patients may have Manda-jvara (mild fever), Manda-agni (diminished digestive process), Ksina-bala (weakness) and Ati-pāṇḍu i.e. extreme anaemia (Bhāvaprakāśa, Madhya-Khaṇḍa, Ĉikitsa Prakaraṇa, 33:2, 3).

Bhāvaprakāśa has described four types of Plihā-vṛddhi and from this the symptoms and signs of four types of Yakṛt-vṛddhi viz., Raktaja yakṛt-vṛddhi, Pīthaja yakṛt-vṛddhi, Kaphaja yakṛt-vṛddhi and Vātaja yakṛt-vṛddhi may be derived as follows:

Raktaja Yakṛt-vṛddhi: The patients of Raktaja type of vākṛt-vṛddhi may have the symptoms of Klama (tiredness), Bhrama (giddiness), Vidāha (burning sensation), Vaivaraṇa (discolouration), Gātra-gaurava...
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(heaviness in the body), Moha (unconsciousness) and Raktodara (bleeding in the abdomen).

Pittaja Yakrt-vrdhdi : The symptoms and signs like Jvara (fever), Pipāsā (thirst), Dāha (burning sensation), Moha (unconsciousness), Pita-gātra (Yellow colour of the body) may be attributed to Pittaja Yakrt-vṛddhi.

Kaphaja Yakrt-vṛddhi : Thick (Sthala), hard (Kaṭhina) and heavy (Gaurava) enlarged liver with mild pain in liver area (Yakṛt) are the signs and Aruci (loss of appetite) is the symptom of Kaphaja Yakṛt-vṛddhi.

Vātaja Yakṛt-Vṛddhi : The patients of Vātaja Yakṛt-vṛddhi may have Udāvarta and may feel pain all along the liver area. The patients of this disease also feel stiffness in Koṣṭha daily (Nityamanaddha Koṣṭhah).

Yakṛddālyudara (Cirrhosis of Liver) :

As mentioned earlier signs and symptoms of Plīhodara have been described in detail in all the Āyurvedic texts. As the symptoms and signs of Yakṛddālyudara are the same as that of Plīhodara, therefore following symptoms and signs may also be constructed for Yakṛddālyudara on the basis of Plīhodara.

Symptoms of Yakṛddālyudara : Daurbalya (weakness), Arocaka (loss of appetite), Avipaka (indigestion) Varco-mutra-graha (retention of faeces and urine), Tamahpraveśa (feeling of darkness in front of eyes), Pipāsā (thirst), Aṅgamārdavā (dull ache in the body), Chardi (vomiting), Mūrccha (unconsciousness), Aṅgasāda (fatigue of extremities), Kāṣa (cough), Śvāsa (dyspnoea), Mṛdu-jvara (mild fever), Ānāha (distention of abdomen), Agninaśa (diminished digestive power), Kārṣya (emaciation), Āśya-vairasva (tastelessness of the mouth), Parvabheda (pain in joints), and Koṣṭha-vātiśūla (pain in abdomen due to vāta), may be the symptoms of Yakṛddālyudara (Caraka Cikitsa 13:38).

Signs of Yakṛddālyudara : Caraka mentions appearing of Nila (bluish), Harita (greenish), Hāridrā (deep yellow) coloured lines (may be veins) on the abdomen as the signs of this disease. The normal colour of the abdomen also changes to abnormal (Vivarnya) and it may become Aruṇā (red) (Caraka Cikitsā, 13:38). Suśruta mentions Ati-pāṇu (severe anaemia) as one of its signs (Suśruta Nidāna, 7:15:16).

Asāṅga Saṅgraha has described three types of Plīhodara (Aṣṭāṅga Saṅgraha Nidāna, 12:29). From this description the signs of Vātika, Paittika and Kaphaja types of Yakṛddālyudara may be postulated as follows:

Vṛtika Yakṛddālyudara : Vṛtika type of Yakṛddālyudara patients may have in addition to other general signs and symptoms, Udāvarta, Rujā (dull pain) and Ānāha (constipation and distention).

Paittika Yakṛddālyudara : In addition to other general symptoms and signs, the patients of Paittika Yakṛddālyudara may have Moha (unconsciousness), Tṛtā (thirst), Dāhana (feeling of burning sensation) and Jvara (fever).

Kaphaja Yakṛddālyudara : The patients of Kaphaja Yakṛddālyudara among the others may have the symptoms of Gaurava (heaviness), and Aruci (loss of appetite) and their liver may be found hard (Kaṭhina).

Yakṛt gata doṣa (Chronic Hepatitis):

The symptoms and signs as described of chronic hepatitis in western medicine resemble with a condition when the morbid Doṣas are situated in Yakṛt. Therefore, it has been given the name of Yakṛt-gata-doṣa. The classics describe five kinds of Plehodoṣā (Panca Plehadosāḥ).

INDIRECT LIVER DISEASES : There are certain such disorders which are discussed thoroughly by our classical Ācāryas, but their direct pathological relationship with liver has not been mentioned. They are as follows :

Kāmalā (Jaundice):

The Kāmalā is one of those clinical entities, conceived in Ayurveda, whose description appears to be the most comprehensive and comparable to the current concepts of the subject. Although the root Sanskrta meaning of the word Kāmalā does not appear to have a relevant bearing with the actual pathogenesis of this disease, it throws a wider light on pathophysiology in general. The word Kāmalā is interpreted as, "Kutsitam Mala Yasmin Roge Saḥ Kāmalā Rogah". As a matter of fact the continued metabolic activities in the body lead to the formation of a series of breakdown products. These products may have to play a beneficial role in the body, while some other might have no beneficial effects. All such products of systemic metabolism may be considered
as Malas. Thus it would be seen that Malas as conceived in Ayurveda does not necessarily mean a waste-product requiring immediate excretion. This is why the Malas have been given the status of Dhātus, which are supposed to be the supporters of living body. Normally, there is constant production of Mala (degraded byproducts) as a result of complex metabolic activities. As mentioned above the Dhāturūpa Malas are beneficial to the body and need not be excreted immediately. They may have some physiological sustaining role of play. But at the same time these Malas when get accumulated in excess or are converted into certain harmful forms, they should be considered “Kutsita Malas” warranting immediate excretion. If such altered Malas are not removed from the body they become the basis of causation of a disease. Here in reference to the production of Kāmalā Roga, it may be understood that the basic pathophysiology of this disease consists of the over accumulation or alteration of certain metabolic factors, which are Malas in nature.

In this context it appears convincing to consider Bilirubin as the basic factor. As pointed out elsewhere, Bilirubin is a waste product of haemoglobin metabolism. It is under constant production in the body and even normal organisms possess a known amount of this agent in the body. In this stage it cannot be considered “Kutsita”. But whenever there is abnormal increase in the level of Bilirubin either due to over production or due to disordered excretion, a disease state develops which can be called Kāmalā as would be discussed further.

In the light of the known pathophysiology of Jaundice as compared to the Samprāpti of Kāmalā Roga, it may be specified that the word Malā in relation to Kāmalā (Jaundice) means stercobilinogen in gastrointestinal tract, urobilinogen in urinary tract and bilirubin in systemic circulation. This is consistent with the clinical manifestations as may be observed in the form of presence of yellow-colour in the blood, urine, or stool, depending upon the type of disturbance.

Therefore, the above definition of Kāmalā Roga seems to have more nearer resemblance to the modern term of Jaundice. It is to be noted here that the word Kāmalā is much more ancient than that of Jaundice in historical perspective.

Aetiology (Nidana) of Kāmalā Roga :

In Ayurveda classics the Nidāna or Hetu (aetiology) of Kāmalā has been described as below:

(1) Caraka describeds Kāmalā as a sequelae of Pāṇḍu Roga (anaemia). This appears to be a statement based on clinical similarity between these two diseases. The pathophysiological similarity between two diseases may be a subject of continued discussion. However, Pāṇḍu (anaemia) may precipitate Kāmalā through different mechanisms.

i) By excessive use of life style and dietetic factors responsible for producing Pāṇḍu or anaemia (Pāṇḍukta Nidāna Sevanam).

ii) Excessive use of factors which may excite the Pitta in a patient of Pāṇḍu Roga (anaemia), whose Pitta activity is already deranged (C.Ci. 16/34).

It may be quite relevant to discuss the role of Rakta (blood) in the pathogenesis of Kāmalā Roga in this context. As a matter of fact Rakta is an essential constituent of human body. Ayurveda conceives that Pitta or the bile is a waste product of Rakta (blood). It is an established fact of the current modern knowledge, that the bile pigment is the waste product resulting from haemoglobin breakdown. The Iron released from this breakdown is stored in the liver and the global fraction joins the protein pool of the body and remains available for the manufacture of new Haemoglobin. The Bilirubin is carried in the circulation to the liver from where it is secreted in the body and undergoes enterohepatic circulation. The Rakta (blood) is a basic factor in the production of Mala Rūpa Pitta. Thus aetiology of Kāmalā depends upon the occurrence of a defect in and around the sites mentioned above.

(2) Apart from Pāṇḍu Roga, Kāmalā may develop in association with other diseases too, or it may develop as an independent entity. Suṣruta, the father of ancient Indian surgery has accepted Kāmalā (Jaundice) not only as one of the complications of Pāṇḍu Roga (Aneamia) but also in association of other diseases. Dalhānacārya, the renowned commentator on Suṣruta Sarhhitā has explained the word “Āmayānte” by saying - “Āmayānte Pāṇḍu Rogānte Anyarogānte Cā”. This preserves the
secret of their observations in the purest and richest essence.

The same idea has also been clearly depicted by Vāgbhaṭṭa in his classical treatise (A. H.: 13/17).

In special reference to inborn errors Caraka and Mādhavakar, the great ancient Indian Ācāryas have remarked prudently on the clinical appearance of Kāmalā Roga (Jaundice) in new born babies.

They have shown the subjective and objective manifestations of this disease associated with the underlying defects in the mother’s milk and have exactly correlated to the baby who sucks it (C.Ci 30/235, M.N.B.R.M.2).

**Classification of Kāmalā Roga:**

According to various Ācāryās Kāmalā can be classified as follows (Table -1):

Table -1 : Classification of Kāmalā Roga

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Worker</th>
<th>Type of Kāmalā</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Caraka</td>
<td>(i) Kothṭhārīta Kāmalā</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(ii) Hāṭkharīta Kāmalā</td>
</tr>
<tr>
<td>2.</td>
<td>Suśruta</td>
<td>(i) Halimaka</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(ii) Pāṇaki</td>
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<td></td>
<td></td>
<td>(iii) Kūṁbhā Hayam or Kumbha Sahwa</td>
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<tr>
<td></td>
<td></td>
<td>(iv) Lāghharaka (v) Alasākhyā</td>
</tr>
<tr>
<td>3.</td>
<td>Vṛgṛbhaṭṭa</td>
<td>(i) Swatantrā Kāmalā</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(ii) Paratantrā Kāmalā</td>
</tr>
</tbody>
</table>

Above mentioned description indicates that the classification of Caraka is very scientific and is comparable with the modern classification.

**Pathogenesis (Samprapti) of Kāmalā:**

**Pitta Dosa :** In the twentieth chapter of Sūtrasthāna, Caraka has described the Nānātmaja diseases of Vīta, Pitta and Kapha. The specific diseases of a particular Doṣa which cannot be produced without involving that particular Doṣa are known as Nānātmaja diseases of that Doṣa. Kāmalā has been included in the 40 Nānātmaja diseases of Pitta described there. It means Pitta Doṣa is always involved in Kāmalā and without its involvement Kāmalā can not be produced.

**Rakta in the Pathogenesis of Kāmalā :** In the twenty-fourth chapter of Sūtrasthāna, Caraka has described Šonitajja Roga i.e. diseases caused by Rakta. Here Kāmalā has not been included in the Šonitajja Roga (Caraka Sutra, 24:11-16). Further in the 28th chapter of Sūtra Sthāna, Caraka has described the diseases caused by the Doṣas when they are situated in morbid state in seven Dhātus. Kāmalā has been included in the diseases caused due to the morbid Doṣa situated in Rakta Dhātu (Raktapradotajjāyante. Caraka Sutra, 28:11-13). It is clear from the above observations that Kāmalā is not a Rakta Roga but when morbid Pitta Doṣa involves the Rakta then Kāmalā may be produced. Rakta is particularly involved in the Samprapti of Koṭṭhārīta Kāmalā.

**Mānsa in the Pathogenesis of Kāmalā :** Mānsa also involves in the pathogenesis of Koṭṭhārīta Kāmalā. Caraka mentions when the patient of anaemia indulges in the Paṭītika Āhara and Viṭhāra, then morbid Pitta causes Daṇḍha of Rakta and Mānsa and produces Kāmalā, specifically Koṭṭhārīta Kāmalā.

**Samprapti (Pathogenesis) of Hāṭkharīta Kāmalā :** Samprapti of Śākharīta Kāmalā differs from Koṭṭhārīta Kāmalā. Caraka mentions that Kapha-sammuṛccha Vītī throws away Pitta from its normal place and thus Śākharīta Kāmalā is produced. Further, it is mentioned that the passage of Pitta is obstructed by the Kapha and due to this Śākharīta Kāmalā is produced. Therefore, it has been suggested that while treating this disease, first Kapha should be treated to remove the obstruction in the passage of Pitta. It is clear from these observations that in Śākharīta Kāmalā, Kapha and Vāyu are also involved.

**Clinical Features of Kamala Roga :**

Caraka has described following clinical features of Kāmalā Roga. (C.Ci.16/35-36) (Table 2)

Table -2 : Clinical Features of Kamala Roga

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Sanskrit</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Hārīdra-netratā</td>
<td>Yellowness of eyes</td>
</tr>
<tr>
<td>2.</td>
<td>Hārīdra-twak</td>
<td>Yellowness of skin</td>
</tr>
<tr>
<td>3.</td>
<td>Hārīdra-nakha</td>
<td>Yellowness of nails</td>
</tr>
<tr>
<td>4.</td>
<td>Hārīdra-ānana</td>
<td>Yellowness of face</td>
</tr>
<tr>
<td>5.</td>
<td>Rakta-Pīta Saṅkṛta</td>
<td>Yellow stool with blood</td>
</tr>
<tr>
<td>6.</td>
<td>Rakta-Pīta Mitra</td>
<td>Yellow urine with blood</td>
</tr>
<tr>
<td>7.</td>
<td>Bheka Varākata</td>
<td>Frog like complexion</td>
</tr>
<tr>
<td>8.</td>
<td>Hatendriya</td>
<td>Exhausted senses</td>
</tr>
<tr>
<td>9.</td>
<td>Dāha</td>
<td>Burning sensation</td>
</tr>
<tr>
<td>10.</td>
<td>Avīpāka</td>
<td>Indigestion</td>
</tr>
<tr>
<td>11.</td>
<td>Daurbalya</td>
<td>Weakness</td>
</tr>
</tbody>
</table>
Different Clinical Stages of Kāmalā:

Halimaka, Loṇhara, Lāgharaka, Alasa and Pānaki and Kumbha Kāmalā: Halimaka is a clinical entity first described by Caraka in the 16th chapter of Cikitsā Sthāna. It has been described there that apart from the other symptoms when a patient of Pāndū Roga develops Harita (greenish), Pīta (yellowish) etc. colour of the body, then this disease is called Halimaka. Cakrapañi Datta while commenting on these verses has indicated that Lāgharaka and Alasa described by Suśruta are the synonyms of Halimaka. Further Cakrapañi while commenting on the same verses, has also indicated that Pānaki, a disease described by other authors, is a particular stage of Kāmalā.

Suśruta, in the 44th chapter of the Uttara Tantra while describing the diagnosis and treatment of Pāndū Roga, has also described Lāgharaka (Alasa) and Halimaka. Dalhana has commented separately on the verses describing Lāgharaka (Alasa) and Halimaka. This indicates that Dalhana is of the view that Lāgharaka (Alasa) and Halimaka are the two different clinical entities. But according to him both Lāgharaka (Alasa) and Halimaka may occur after the Pāndū Roga or Kumbhasahya i.e. Kumbha-Kāmalā. This shows that Lāgharaka (Alasa) and Halimaka have something common. Further it has been mentioned by Dalhana that the Pānaki described by other Tantras is a particular stage of Kumbha-sahya i.e. Kumbha-Kāmalā.

Vāgbhaṭa has also described Halimaka in the 13th chapter of Nidāna Sthāna after describing the diagnosis of Pāndū Roga and Kāmalā. It has clearly been mentioned there that Loṇhra, Halimaka and Alas are the synonyms. The description of Halimaka is about the same as that of Caraka.

Yogaratnākara has also described Halimaka, along with Pāndū Roga and Kāmalā. In addition to it a clinical entity named as Pānaki has also been described. In this disease apart from other symptoms the patient develops Pīta (yellowish) colour inside (Antah) and outside (Bahira) of the body. It is important to note here that the eyes of the patient of Pānaki remains Pāndū (pallor).

So it is clear from the foregoing discussion that there is some controversy over the clinical entities of Halimaka (Loṇhra), Alas (Lāgharaka) and Pānaki. Some Acāryas suggest that they are the synonyms to each other while others described them as separate clinical entities. However, from clinical point of view one thing is common that they all occur either after Pāndū Roga or Kāmalā. So again careful clinical history and differentiation between the Pīta (yellowish) colour of these diseases and Hāridra i.e. deep yellow colour of Kāmalā will help to reach the underlying disease. A brief symptomatology of above mentioned diseases are given below.

Features of Halimaka: Mādhavakāra mentioned that when patient of Pāndū Roga (anaemia) develops green, black or yellow discolouration (of skin), loss of strength and vigour, sleepiness; sluggish digestion, mild fever, loss of libido, bodyache, burning sensation, thirst, anorexia and giddiness; he should be diagnosed as suffering from Halimaka disease, which is due to (the vitiation of) Vāta Pitta (C.Ci.16/132, 133).

Features of Lāgharaka and Alasakhya: Kumbha Kāmalā associated with fever, bodyache, giddiness, malaise, drowsiness and emaciation is called Lāgharaka and Alasakhya (Su.U.44/3).

Features of Pānaki: Suśruta has mentioned the following symptoms of Pālaki viz. Santāpa (pyrexia), Bhinnavarcasa (loose motions), Vahirantasca Pitta (yellow discolouration of external and internal parts of body), Pānqunetra (Pale eyes) (S.U.44).

Singh R.H. (1982) has mentioned in his book “Ayurveda Nidana evam Cikitsa Ke Siddhanata” that Halimaka and Pānaki are not independent diseases rather they are considered as two different complicated stages of Kāmalā Roga. He suggest that Kāmalā complicated with fever and diarrhoea be diagnosed as Halimaka and Pānaki respectively.

Features of Kumbha-Kāmalā (Kumbhasahya or Kāmalā): Kukbha-Kāmalā is a clinical condition described by most of Āyurvedic texts after the description of Koṣṭhāśrita Kāmalā. According to Cakrapañi Kumbha-Kāmalā is a particular stage of Koṣṭhāśrita Kāmalā. By close perusal of all the Āyurvedic literature available on Kumbha Kāmalā it can be postulated that a long standing (Kalantar according to Caraka) case of
Koṣṭhāsrita Kāmalā when develops oedema and pain in joints (Śopha and Parva-bhedā according to Suśruta) ultimately becomes difficult to cure (Kṛcchra) then this condition is known as Kumbha-Kāmalā. Thus it is clear that Kumabha-Kāmalā, an advance stage of Koṣṭhāsrita Kāmalā is very important from the clinical point of view. It should always be in the mind of the attending physician that any ignorance or delay in the treatment of Kāmalā either on the part of physician or the patient may lead to Kumbha-Kāmalā, which is difficult to cure.

Singh R.H. (1982) has suggested that Kumbha-Kāmalā is a state of Kāmalā complicated with oedema, which may result from long standing Kāmalā Roga.

Ayurvedic management of Liver diseases: Inferences from a Clinical study

The principle of management of these diseases differs in Ayurveda, from western modern medicine. Yakṛt (liver) is supposed to be the seat of Raktavaha Srotasa and Pitta is believed to be the Mala of Rakta. Hence the line of treatment adopted for the Yakṛt-Rogas comprise of the measures used for the pacification of Pitta Doṣa. Therefore, it is evident from the treatment measures described in classical texts, the maximum herbs are bitter (Tikta) is taste, which pacify the Pitta Doṣa.

This article presents the clinical evaluation of Kalmegha (Andrographis paniculata) in the management of 180 patients of hepatic disorders. Kalmegha is an Ayurvedic herbal drug used for liver disorders for a long time. Kalmegha is comparable to Bhūnimbā of classical period which is an ingredient of many classical herbal preparations viz Phalatrikadi kašaya (A.H.C. 16/13) commonly used for Kāmalā (Jaundice). However, in recent years a creditable work has been done on certain other drugs prescribed for liver diseases in Ayurveda by Chopra and Nadkarni (1955). Kalmegha is one of them along with a few others. Certain other clinical studies have also been conducted on this drug in liver diseases (Chaudhuri, 1978 & Tomar et al. 1981). This drug was used in decoction form in the dose of 25 ml thrice daily (equivalent to the 40 gm of the crude drug) for three weeks.

180 patients of certain Yakṛt-Rogas (liver diseases) have been studied in this series- It includes 136 patients of Koṣṭhāshakhaśrita Kāmalā (hepatocellular jaundice), 18 patients of Śakhaśrita Kāmalā (obstructive jaundice), six patients of Kumbha Kāmalā, twelve patients of Yakṛt-gata-Doṣa (chronic hepatitis) and eight patients of Yakṛddālūyudara (hepatomegaly with generalised distention of abdomen).

The response of treatment was assessed on clinical as well as biochemical parameters. The following criteria was used for categorising the results.

CURED : Complete relief in signs and symptoms and normalization of altered liver function tests.

IMPROVED : Either marked improvement in signs and symptoms and improvement in altered liver function tests.

UNCHANGED : No improvement in signs and symptoms or in altered liver function tests.

Therapeutic Observations:

Kalmegh has cured 90% patients of Koṣṭhāshakhaśrita Kāmalā (hepatocellular jaundice), 22.2% patients of Śakhaśrita Kāmalā (obstructive jaundice), 66.6% patients of Kumbha Kāmalā and 83.3% patients of Yakṛt-gata Doṣa (Chronic hepatities) while it improved remaining 10% patients of Koṣṭhāshakhaśrita Kāmalā (hepatocellular jaundice), 33.3% patients of Kumbha Kāmalā and 16.6% patients of Yakṛt-gata-Doṣa (chronic hepatitis). Kalmegha showed no effect on the patients of Yakṛddālūyudara and 77.8% patients of Śakhaśrita Kāmalā (obstructive jaundice).

There were no side effects during the course of treatment with this drug. The results of this study lead to the conclusion that Kalmegha (A paniculata) has good role in the treatment of Koṣṭhāshakhaśrita Kāmalā (hepatocellular Jaundice), Yakṛt-gata Doṣa (chronic hepatitis) and Kumbha Kāmalā. On this basis Kalmegha (Andrographis paniculata) may be recommended for the treatment of these disorders. The results were unsatisfactory in cases of Śakasrita Kāmalā i.e. observative jaundice and Yakṛddālūyudara (cirrhosis of liver) (Table 3).

Table 3: Therapeutic Observations of Kalmegh upon Kamala

<table>
<thead>
<tr>
<th>Clinical Groups</th>
<th>Cured</th>
<th>Improved</th>
<th>Unsatisfactory</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Koṣṭhāsakhāṣṭra Kāmalā (Hepatocellular jaundice)</td>
<td>90%</td>
<td>10%</td>
<td>Nil</td>
</tr>
</tbody>
</table>
2. Śākhastra Kāmalā (Obstructive jaundice) 22.2% - 77.8%

3. Kumbha Kāmalā (Chronic non obstructive jaundice) 66.6% 33.3% Nil

4. Yakṛta Doṣa (Chronic hepatitis) 83.3% 16.6% Nil

Conclusion:
Thus Ayurveda literature presents an extensive description of hepatobiliary diseases and their Ayurvedic Management. Ayurvedic hepatology is a rich component. Certain herbal drugs described in Ayurvedic classical texts for the management of such disorders are proved beneficial. Apart from Kālamegha (Andrographis paniculata) certain other drugs like Kutaki (Picrorhiza kurrooa), Brṛgaraja (Eclipta alba), Dāruharidra (Berberis aristata) and Kākamachi (Solanum nigrum), are effective in various Yakṛt Rogas (liver diseases). Results of the clinical trials on these drugs are encouraging, warranting further studies for main stream use.

Acknowledgements:
Author is highly thankful to Prof. R.H. Singh, Professor Emeritus, Banaras Hindu University, Varanasi for all help and guidance in writing this article which is based on my Ph.D. thesis submitted under the supervision of Prof. Singh to Banaras Hindu University.

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Source of Support: Nil
Conflict of Interest: None declared