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A RANDOMIZED CONTROLLED CLINICAL STUDY TO EVALUATE THE EFFICACY OF TRIPHALADI YOGA AND DHATRI LOHA YOGA IN MANAGEMENT OF BAHUPITTA KAMALA (HEPATOCELLULAR JAUNDICE)

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ABSTRACT

Background: Jaundice (Kamala) is a clinical condition characterized by yellow discoloration of the skin, sclera, and mucous membranes resulting from **hyperbilirubinemia**, an abnormal increase in serum bilirubin levels. In the present era, unhealthy lifestyle practices, poor hygiene, inappropriate dietary habits, excessive alcohol consumption, and other hepatotoxic factors have significantly contributed to the rising incidence of liver disorders, which clinically correlate with **Bahupitta Kamala** described in Ayurveda. The increasing prevalence of these risk factors has led to a higher burden of jaundice, with an estimated incidence of **2.37–3.15 per 1,000 population** in India. In the present study, the therapeutic efficacy of the Ayurvedic interventions was evaluated by assessing improvements in the overall clinical signs and symptoms, along with objective biochemical parameters, before and after treatment. **Objectives:** To evaluate the effect of *Triphaladi yoga* and *Dhatriloha yoga* in *Bahupitta Kamala Roga*. **Methodology:** A comparative clinical study was conducted on *Kamala* for period of 30 days. The patients were divided into 2 groups. In Group A 30 patients were administered with *Triphaladi yoga* internally and in Group B 30 patients

were administered with *Dhatriloha yoga* internally. **Results:** Group A and Group B have shown statistically significant result. Group A treated with *Triphaladi yoga* showed better result compared with Group B treated with *Dhatriloha yoga*.

KEYWORDS: *Kamala, Jaundice, Triphaladi yoga, Dhatriloha yoga.*

INTRODUCTION

Ayurveda, the ancient system of medicine, is the science of life that encompasses the knowledge required to maintain health and prevent disease. Its primary objective is to preserve the health of healthy individuals (Swasthasya Swasthya Rakshanam) and to alleviate diseases in affected individuals (Aturasya Vikara Prashamanam). The principles of disease prevention, health promotion, and treatment have been comprehensively described in the Ayurvedic classics since ancient times. Ayurveda is recognized as the Upaveda of Atharvaveda, where diseases characterized by yellow discoloration of the sclera, skin, tongue, nails, and urine, corresponding to Kamala, along with their management, have been described in detail.[1,2]

The Ayurvedic healthcare system emphasizes a holistic approach to health by maintaining harmony among the body, mind, and spirit through appropriate dietary practices, lifestyle modifications, and the use of natural medicines. Unlike the modern approach, which often focuses on treating established disease, Ayurveda advocates preventive measures and early intervention to preserve health and prevent the progression of illness. This holistic philosophy enables an individual to achieve physical, mental, and emotional well-being while maintaining a balanced and healthy life.

Ayurvedic therapeutics predominantly utilize drugs of herbal, mineral, and animal origin, which have been extensively described in the classical texts and have been used safely for centuries. When administered judiciously according to Ayurvedic principles, these formulations are considered effective, economical, and generally free from serious adverse effects. Their long-standing clinical use and classical authenticity make them valuable therapeutic options for the management of various disorders.

In routine clinical practice, a considerable number of patients present with Kamala (Jaundice) and its associated complications, often due to delayed diagnosis, unhealthy lifestyle practices, improper dietary habits, alcohol consumption, and inadequate management during the early stages of the disease.

Although numerous formulations have been described in the Ayurvedic classics for the treatment of Kamala, Triphaladi Yoga and Dhatriloha Yoga, mentioned in Charak chikitsasthan and Chakradutta, were selected for the present study because of their classical authenticity, cost-effectiveness, easy availability, and wide therapeutic application.[3,4]

Triphaladi Yoga comprises *Triphala, Daruharidra, Haridra, Katuki,* and *Loha Bhasma*.[5] whereas *Dhatriloha Yoga* contains *Amalaki, Haridra, Pippali, Shunthi, Maricha,* and *Loha Bhasma*.[6] Many of these ingredients possess Deepana, Pachana, Pittashamaka, Yakrit-Uttejaka, Raktaprasadana, and Rasayana properties, making them particularly useful in the management of Kamala. In contemporary medicine, the clinical condition jaundice, characterized by yellow discoloration resulting from hyperbilirubinemia, closely corresponds to the Ayurvedic concept of Kamala.

Considering the increasing prevalence of liver disorders and the need for safe, effective, and economical therapeutic alternatives, the present study was undertaken to evaluate and compare the clinical efficacy of *Triphaladi Yoga* and *Dhatriloha Yoga* in the management of *BahupittaKamala* through subjective clinical assessment and objective biochemical parameters.

MATERIALS AND METHODS

Selection of patients

The patients with the conformed diagnosis of *Kamala* clinically as well as laboratory investigations were selected for the study. Patients were selected from the Seth.

Inclusion criteria

- Patients Having *Lakshana*s of *Bahupitta Kamala*
- Patients having either raised Sr Bilirubin .
- Patient willing to give voluntary informed consent for the study.
- Patients in the age group of 18 to 60 years.
- Patients of either sex
- Participants of one or all of the following altered liver function test will be selected.

The Liver Function Test Normal Ranges[7]

- Total Bilirubin= >0.1-1.2mg/dl
- Indirect Bilirubin (unconjugated)=>0.7mg/dl
- Direct Bilirubin(conjugated)=>0.4mg/dl
- Alanine amino transferase (ALT)/SGPT=>7-56U/L
- Aspartate amino transferase (AST)/SGOT=>0-35 U/L
- AST/ALT ratio >0.9
- Alkaline phosphatase (ALP)=>41-133U/L

Exclusion criteria

- Patients with Obstructive Jaundice
- Patients with Sr. Bilirubin (Total) more than 10mg/dl
- Patients with Hemolytic Jaundice
- Patients diagnosed with Liver cirrhosis, Hepatic Encephalopathy.
- Age less than 18 years and more than 60 years
- Pregnant women and lactating mothers. The patient suffering Uncontrolled Diabetes Mellitus, Hypertension.
- The patient having serious Cardiac disorders like MI, Cardiac failure.

Investigation

The laboratory investigations are very important for the diagnosis of the diseases. For the Kamala disease diagnostic purpose

1. CBC[8]
2. URINE BILE SALT BILE PIGMENTS[9]
3. LFT BEFORE AND AFTER[10]

Trial drug

Triphaladi Yoga**:** *Triphala, Daruharidra, Haridra Katuki, Loha bhasma.*

Dhatriloha Yoga: *Amalaki, haridra, Pimpali sunthi maricha Loha Bhasma* Triphaladi Yoga and Dhatriloha Yoga will be prepared according to the classical references.

Study design**:** Prospective comparative clinical study

Sample size

- Total number of patients taken for the study will be 60.
- Two groups including 30 patients in each.

- Group A: 30 patients will receive *Triphaladi Yoga.*
- Group B: 30 patients will receive *Dhatriloha yoga*

Posology

- *Triphaladi Yoga* 3gm twice a day paschatbhakta with *Anupana* as *Madhu ghrut.*
- *Dhatriloha Yoga* 3gm twice a day paschatbhakta With Anupana as *Ghrut Sharkara.*

Duration of treatment**:** 30 days.

Parameters

Subjective Parameters[11]

Clinical signs and Symptoms of *Kamala Roga* mentioned in Ayurveda.

- *Haridra Netra*
- *Pitta mootrata*
- *Haridra Twaka Nakha Aananaa*
- *Aruchi*
- *Avipaka*
- *Daurbalya*

Objective Criteria

Liver Function Test Before after difference in Total Bilirubin Direct Indirect SGOT SGPT Alkaline Phosphatase.

Subjective Parameters

Symptoms	No	Mild	Moderate	Severe	Very Severe
Haridra Netra	0	1	2	3	4
Pitta mootrata	0	1	2	3	4
Haridra Twaka Nakha Aananaa	0	1	2	3	4
Aruchi	0	1	2	3	4
Avipaka	0	1	2	3	4
Daurbalya	0	1	2	3	4

Assessment criteria

- Changes in clinical signs and symptoms of *Kamala Roga*.
- Serum bilirubin - Direct, Indirect, Total, sgot sgpt alkaline phosphatase

Grade	0	1	2	3	4
Haridra netra	Normal	Yellowish white	Yellow colour	Dark yellow	Greenish

(Yellowish Discolouration of eyes)	colour of sclera	colour of sclera	of sclera	colour of sclera	yellow colour of sclera
***Pita Mootrata* (Yellow Micturition)**	Normal colour of urine	Pale Yellow colour of urine	Yellow colourof urine	Dark Yellow colour of urine	
***Haridra Twaka Nakha Aanana* (Yellowish Discolouration of skin)**	Normal complexion of skin nail and face	Yellowish white colour of skin nails and face	Yellow colour of skin nails and face	Dark yellow colour of skin nails and face	Greenish yellow colour of skin nails and face
***Aruchi* (Anorexia)**	Taking a full diet on a proper gap	Take moderate Diet on proper gap between meals	Decresed amount of diet and the increased gap Between meals	Unable to consume a minimum amount of diet on at least 2 Meal time	Unable to consume a minimu m amount of diet in a whole day
***Avipaka* (Indigestion)**	Able to Digest any Kind of eatables	Able to digest Normal food	Able to digest light food but difficultyin digestionof normal food	Unable to digest light food as juice daliya khichadi etc	--
***Daurbalya* (Generalised Weakness)**	No weakness	Weakness after doing some extra work other than daily routine	Weakness after doing normal daily routine Work	Weakness without doing anything	--

OBSERVATIONS

Demographic Observations

A total of 60 patients diagnosed with Bahupitta Kamala were enrolled in the present clinical study and were equally allocated into Group A (n = 30) and Group B (n = 30). The demographic profile revealed that the majority of the participants were male (88.33%), while 11.67% were female, indicating a higher prevalence of the disease among males in the present study. Regarding age distribution, the highest proportion of subjects belonged to the 31–45 years (45.00%) and 46–60 years (45.00%) age groups, whereas only 10.00% were between 18–30 years, suggesting that Bahupitta Kamala was more common among middle-aged and older adults.

The majority of the study population was Hindu (95.00%), with 5.00% belonging to the Muslim community. Educational status showed that 51.67% of the participants were uneducated, while 48.33% were educated. Occupational analysis revealed that workers constituted the largest proportion (41.67%), followed by individuals engaged in jobs (13.33%), farming (11.67%), housewives (11.67%), business (10.00%), and retired individuals (6.67%), whereas students and unemployed subjects accounted for only a small

percentage.

Most of the participants were married (95.00%), with only 5.00% being unmarried. Based on socioeconomic status, the majority of patients belonged to the middle socioeconomic class (73.33%), followed by the lower class (18.33%) and upper class (8.33%). Assessment of Prakruti revealed that Kapha-Pittaja Prakruti (38.33%) was the most common constitution, followed by Pitta-Kaphaja (20.00%), Pitta-Vataja (15.00%), Kapha-Vataja (11.67%), Vata-Kaphaja (10.00%), and Vata-Pittaja (5.00%).

Evaluation of Agni demonstrated that Mandagni (41.67%) was the predominant digestive status, followed by Vishamagni (23.33%), Samagni (21.67%), and Tikshnagni (13.33%), indicating that impaired digestive function was common among the study participants. Dietary assessment showed that the majority of subjects (61.67%) consumed a mixed diet, while 38.33% followed a vegetarian diet. Addiction history revealed that alcohol consumption was the most prevalent habit (63.33%), followed by tobacco use (20.00%) and tea consumption (10.00%), whereas only 6.67% of the participants reported no addiction.

Overall, the demographic profile indicates that Bahupitta Kamala was predominantly observed among middle-aged, married males belonging to the middle socioeconomic class, with Kapha-Pittaja Prakruti, Mandagni, mixed dietary habits, and a high prevalence of alcohol consumption. These observations suggest that occupational stress, dietary practices, impaired digestive function, and alcohol intake may have contributed to the development of the disease in the present study population**.**

RESULTS

Effect of Therapy in Group A

The therapy administered to Group A produced statistically significant improvement in both subjective and objective parameters of Bahupitta Kamala. Analysis of subjective parameters using the Wilcoxon Signed Rank Test showed significant reduction in the severity of all clinical symptoms ($p < 0.05$). The highest percentage improvement was observed in Mutra Pittata (78.26%), followed by Haridra Twaka (77.78%), Aruchi (76.92%), Haridra Netra (76.62%), Avipaka (75.00%), and Daurbalya (73.77%), indicating marked relief in the classical manifestations of the disease. Similarly, assessment of objective parameters using the paired t-test revealed statistically significant improvement in liver function tests. The greatest improvement was observed in Total Bilirubin (59.75%), followed by SGOT

(55.99%), Direct Bilirubin (54.69%), Indirect Bilirubin (50.94%), SGPT (49.08%), and Alkaline Phosphatase (47.60%) ($p < 0.05$). These findings indicate that the therapy administered in Group A effectively alleviated clinical symptoms and restored liver function, demonstrating substantial therapeutic efficacy in the management of Bahupitta Kamala.

Showing Individual study of the Subjective parameters in Group A.

Parameter	BT Mean ± SD	AT Mean ± SD	Wilcoxon W	P-value	% Effect	Result
Haridra Netra	2.57 ± 0.63	0.60 ± 0.67	435	0.000031	76.62	Sig
Mutra Pittata	2.30 ± 0.47	0.50 ± 0.57	465	0.000002	78.26	Sig
Haridra Twaka	1.80 ± 0.76	0.40 ± 0.56	325	0.000010	77.78	Sig
Aruchi	1.73 ± 0.98	0.40 ± 0.56	351	0.014795	76.92	Sig
Avipaka	1.60 ± 0.77	0.40 ± 0.56	325	0.000010	75.00	Sig
Daurbalya	2.03 ± 0.56	0.53 ± 0.51	465	0.000002	73.77	Sig

Showing Individual study of the Objective parameters in Group A.

Parameter	BT Mean ± SD	AT Mean ± SD	t-value	P-value	% Effect	Result
Total Bilirubin	3.72 ± 2.15	1.50 ± 1.00	8.73	0.000000001	59.75	Sig
Direct Bilirubin	1.81 ± 1.27	0.82 ± 0.61	6.26	0.000000782	54.69	Sig
Indirect Bilirubin	1.72 ± 1.12	0.84 ± 0.55	6.60	0.000000312	50.94	Sig
SGOT (AST)	129.00 ± 232.53	56.77 ± 76.30	2.48	0.019190446	55.99	Sig
SGPT (ALT)	81.30 ± 97.23	41.40 ± 33.86	3.36	0.002197649	49.08	Sig
Alkaline Phosphatase	195.17 ± 105.11	102.27 ± 43.58	5.85	0.000002406	47.60	Sig

Effect of Therapy in Group B

The therapy administered to Group B also produced statistically significant improvement in both subjective and objective parameters of Bahupitta Kamala. Wilcoxon Signed Rank Test demonstrated significant reduction in all subjective symptoms ($p < 0.05$). Among the subjective parameters, the highest percentage improvement was observed in Avipaka (70.00%), followed by Haridra Twaka (69.09%), Daurbalya (68.97%), Mutra Pittata (68.75%), Haridra Netra (68.42%), and Aruchi (67.92%), indicating effective symptomatic relief. Evaluation of objective parameters using the paired t-test also showed statistically significant improvement in biochemical markers of liver function.

The maximum improvement was observed in Total Bilirubin (56.40%), followed by Direct Bilirubin (55.18%), Alkaline Phosphatase (55.34%), SGOT (50.79%), SGPT (49.41%), and Indirect Bilirubin (41.89%) ($p < 0.05$). These results suggest that the therapy used in Group B was effective in reducing the clinical features of Bahupitta Kamala and improving liver

function, thereby demonstrating significant therapeutic benefit.

Showing Individual study of the Subjective parameters in Group B.

Parameter	BT Mean ± SD	AT Mean ± SD	Wilcoxon W	P-value	% Effect	Result
Haridra Netra	2.53 ± 0.63	0.80 ± 0.71	465	0.000002	68.42	Sig
Mutra Pittata	2.13 ± 0.63	0.67 ± 0.55	435	0.000031	68.75	Sig
Haridra Twaka	1.83 ± 0.83	0.57 ± 0.50	378	0.002765	69.09	Sig
Aruchi	1.77 ± 0.63	0.57 ± 0.57	378	0.002765	67.92	Sig
Avipaka	2.00 ± 0.53	0.60 ± 0.50	465	0.000002	70.00	Sig
Daurbalya	1.93 ± 0.64	0.60 ± 0.56	406	0.000359	68.97	Sig

Showing Individual study of the Objective parameters in Group B.

Parameter	BT Mean ± SD	AT Mean ± SD	t-value	P-value	% Effect	Result
Total Bilirubin	3.72 ± 1.98	1.62 ± 1.15	9.09	0.000000001	56.40	Sig
Direct Bilirubin	1.90 ± 1.33	0.85 ± 0.78	6.91	0.000000136	55.18	Sig
Indirect Bilirubin	1.86 ± 1.07	1.08 ± 0.81	4.72	0.000055211	41.89	Sig
SGOT (AST)	124.17 ± 86.28	61.10 ± 34.86	5.73	0.000003349	50.79	Sig
SGPT (ALT)	90.07 ± 77.97	45.57 ± 25.22	3.77	0.000744236	49.41	Sig
Alkaline Phosphatase	216.83 ± 123.66	96.83 ± 59.09	7.64	0.000000020	55.34	Sig

Inter group comparison

The present clinical study demonstrated statistically significant improvement in both Group A and Group B following treatment. Analysis of subjective parameters using the Wilcoxon Signed Rank Test revealed significant reduction in the severity of all clinical symptoms in both groups ($p < 0.05$). Group A exhibited greater percentage improvement in all subjective parameters, with relief ranging from **73.77% to 78.26%**, whereas Group B showed improvement ranging from **67.92% to 70.00%**. The maximum improvement in Group A was observed in **Mutra Pittata (78.26%)**, followed by **Haridra Twaka (77.78%)**, **Haridra Netra (76.62%)**, **Aruchi (76.92%)**, **Avipaka (75.00%)**, and **Daurbalya (73.77%)**. In comparison, Group B demonstrated improvement of **70.00% in Avipaka**, **69.09% in Haridra Twaka**, **68.97% in Daurbalya**, **68.75% in Mutra Pittata**, **68.42% in Haridra Netra**, and **67.92% in Aruchi**.

Evaluation of objective parameters using the paired t-test also revealed statistically significant improvement in both groups ($p < 0.05$). In Group A, percentage improvement ranged from **47.60% to 59.75%**, with the highest reduction observed in **Total Bilirubin**

(59.75%), followed by **SGOT (55.99%)**, **Direct Bilirubin (54.69%)**, **Indirect Bilirubin (50.94%)**, **SGPT (49.08%)**, and **Alkaline Phosphatase (47.60%)**. In Group B, improvement ranged from **41.89% to 56.40%**, with maximum improvement observed in **Total Bilirubin (56.40%)**, followed by **Direct Bilirubin (55.18%)**, **Alkaline Phosphatase (55.34%)**, **SGOT (50.79%)**, **SGPT (49.41%)**, and **Indirect Bilirubin (41.89%)**.

Overall, both treatment groups were effective in reducing the clinical manifestations and improving the biochemical parameters of Bahupitta Kamala. However, Group A consistently demonstrated greater percentage improvement in most subjective parameters and in key biochemical markers, including Total Bilirubin, Indirect Bilirubin, and SGOT, whereas Group B showed slightly better improvement in Direct Bilirubin, SGPT, and Alkaline Phosphatase. These findings indicate that both interventions were effective, with Group A exhibiting comparatively superior overall clinical efficacy.

Comparative effect of treatment between the Group A & B after follow-up in Subjective parameters.

Parameters	Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	P-Value	Result
Haridra Netra	Group A	30	33.5	1005	360	0.144	NS
	Group B	30	27.5	825			
	Total	60					
Mutra pittata	Group A	30	34.7	1041	324	0.041	Sig
	Group B	30	26.3	789			
	Total	60					
Haridra Twaka	Group A	30	32.03	961	404	0.466	NS
	Group B	30	28.97	869			
	Total	60					
Aruchi	Group A	30	32.1	963	402	0.437	NS
	Group B	30	28.9	867			
	Total	60					
Avipaka	Group A	30	28.73	862	397	0.383	NS
	Group B	30	32.27	968			
	Total	60					
Daurbalya	Group A	30	31.97	959	406	0.466	NS
	Group B	30	29.03	871			
	Total	60					

Comparative effect of treatment between the Group A & B after follow-up in Objective parameters.

Variables	Group	N	Mean	SD	Mean difference	SE difference	t-Value	P-value
Total Bilirubin	A	20	2.22	1.39	0.13	0.34	0.37	0.7140
	B	20	2.10	1.26				
Direct Bilirubin	A	20	0.99	0.87	-0.06	0.22	-0.27	0.7900
	B	20	1.05	0.83				
Indirect Bilirubin	A	20	0.88	0.73	0.10	0.21	0.45	0.6510
	B	20	0.78	0.91				
SGOT	A	20	72.20	159.00	9.17	31.09	0.30	0.7690
	B	20	63.10	60.30				
SGPT	A	20	39.90	65.10	-4.60	16.75	-0.28	0.7850
	B	20	44.50	64.70				
Alkaline phosphatase	A	20	92.90	87.00	-27.10	22.34	-1.21	0.2300
	B	20	120.00	86.00				

DISCUSSION

According to Ayurveda, **Agnimandya** and **Pitta Vikriti** are the principal etiological factors responsible for the development of **Kamala**. In the present clinical study, most patients exhibited features suggestive of **Agnimandya** along with **Pitta Vikriti**, supporting the classical Ayurvedic concept of the disease. The major Ayurvedic classics provide a comprehensive description of Kamala, including its etiology, pathogenesis, classification, and management. In **Charaka Samhita**, Kamala is described as a **Nidānārthakara Roga** of **Pandu**, whereas **Vagbhata** has described **Swatantra Kamala** in addition to **Paratantra Kamala**, which was primarily explained by **Charaka** and **Sushruta**.[12] Although the classification differs among the classics, **Pitta Dosha** is considered the predominant pathogenic factor in both Swatantra and Paratantra Kamala. Furthermore, **Dalhana**, the commentator of **Sushruta Samhita**, has mentioned **Panaki** as a distinct variety of Kamala.

The Ayurvedic principles of treatment emphasize **Nidana Parivarjana**, **Shodhana**, and **Shamana Chikitsa** as the fundamental approaches for the successful management of Kamala. When these therapeutic modalities are administered appropriately according to the stage and severity of the disease, satisfactory clinical outcomes can be achieved. In the present era, there is an increasing need to scientifically validate classical Ayurvedic formulations through systematic clinical research. Although numerous **Shamana Yogas** have been described in the Ayurvedic texts for the treatment of Kamala, **Triphaladi Yoga** and **Dhatriloha Yoga** were selected for the present study because of their classical authenticity, therapeutic potential, cost-effectiveness, and easy availability. The study was therefore undertaken to evaluate and compare the clinical efficacy of these two formulations in the management of **Bahupitta Kamala**.

Probable Mode of Action of Triphaladi Yoga and Dhatriloha Yoga in Bahupitta Kamala

The pharmacodynamics of Ayurvedic formulations are primarily based on the fundamental principles of **Panchamahabhuta** and **Tridosha Siddhanta**, which explain the physicochemical and biological activities of drugs. The therapeutic actions of Ayurvedic medicines are determined by their **Rasa (taste), Guna (qualities), Veerya (potency), Vipaka (post-digestive effect), and Prabhava (specific action)**.

According to **Chakrapani**, Veerya is of two types, namely **Chintya Veerya** (which can be understood through inference) and **Achintya Veerya** (which is beyond logical inference).

The latter is regarded as **Prabhava**, a unique and specific property of a drug responsible for actions that cannot be explained solely by Rasa, Guna, Veerya, or Vipaka.[13]

Probable Mode of Action of Triphaladi Yoga

Triphaladi Yoga exerts its therapeutic effect through the synergistic action of its ingredients, namely **Triphala, Daruharidra, Haridra, Katuki, and Loha Bhasma**. Most of these drugs possess **Tikta, Katu, Kashaya, and Madhura Rasa**, **Laghu** and **Ruksha Guna**, **Ushna or Anushna Veerya**, and predominantly **Katu Vipaka**. These pharmacodynamic properties contribute to **Deepana (enhancement of digestive fire), Pachana (digestion of Ama), Pitta Shamana, Rakta Prasadana, Srotoshodhana, and Yakrit-Uttejana (stimulation of liver function)**.

Kamala is predominantly a **Pitta-Rakta Pradoshaja Vyadhi**, wherein vitiated Pitta impairs the normal function of Rakta and the hepatobiliary system. The Tikta, Kashaya, and Madhura Rasa predominant drugs help pacify aggravated Pitta, while Laghu and Ruksha Guna facilitate the digestion of Ama and removal of Srotorodha. Katuki acts as an excellent Pittarechaka and hepatoprotective drug, Triphala possesses Rasayana, antioxidant, and mild laxative properties, whereas Haridra and Daruharidra exhibit anti-inflammatory, cholagogue, and hepatoprotective activities. Loha Bhasma acts as a Rasayana, improves Rakta Dhatu, and enhances tissue metabolism.

Thus, the combined action of these ingredients restores **Agni**, corrects **Pitta Dushti**, purifies the **Rakta Dhatu**, improves liver function, and facilitates normal bilirubin metabolism, thereby reducing the clinical manifestations of Bahupitta Kamala. The overall formulation

exhibits **Kamalahara**, **hepatoprotective**, **antioxidant**, and **Rasayana** properties, resulting in significant clinical and biochemical improvement.

Probable Mode of Action of Dhatriloha Yoga

Dhatriloha Yoga comprises **Amalaki, Haridra, Pippali, Shunthi, Maricha, and Loha Bhasma**, which collectively act through their characteristic **Rasa, Guna, Veerya, Vipaka, and Prabhava**. Most of these drugs possess **Tikta, Katu, Kashaya, and Madhura Rasa**, **Laghu** and **Ruksha Guna**, and predominantly **Katu Vipaka**, making the formulation effective in correcting the underlying pathology of Kamala.

The formulation acts as **Deepana**, **Pachana**, **Amapachana**, **Pitta Shamana**, **Srotoshodhana**, and **Yakrit-Uttejaka**. Amalaki provides Rasayana, antioxidant, and hepatoprotective effects while pacifying Pitta. Haridra possesses anti-inflammatory and hepatoprotective activities. Pippali, Shunthi, and Maricha, the constituents of **Trikatu**, enhance Agni, improve digestion, increase bioavailability, remove Ama, and facilitate proper metabolism. Loha Bhasma improves Rakta Dhatu formation and promotes tissue regeneration through its Rasayana action.

The combined pharmacological actions of these ingredients help restore impaired Agni, normalize Pitta, eliminate Ama, improve hepatocellular function, and enhance bile metabolism. Consequently, Dhatriloha Yoga effectively alleviates the signs and symptoms of Bahupitta Kamala while demonstrating significant hepatoprotective and restorative effects on liver function.

CONCLUSION

Kamala is characterized by yellowish discoloration of the sclera, skin, nails, and urine due to the vitiation of **Pitta Dosha**, predominantly involving **Rakta** and **Mamsa Dhatu**. In **Koshthashrita Kamala**, the disease commonly develops as a sequel to **Pandu**, whereas in **Shakhashrita Kamala**, aggravated **Vata** and **Kapha Dosha** obstruct the normal movement of Pitta, resulting in its accumulation in the peripheral tissues. Both **Triphaladi Yoga** and **Dhatriloha Yoga** act by correcting **Agnimandya**, digesting **Ama**, pacifying aggravated **Pitta**, clearing obstructed **Srotas**, and restoring normal hepatic and biliary functions. Owing to their **Deepana, Pachana, Pitta Shamana, Anulomana, Srotoshodhana, Rasayana, and hepatoprotective** properties, both formulations effectively reduce the clinical manifestations and biochemical abnormalities of Bahupitta Kamala but Group A treated with Triphaladi

yoga showed better result compared with group B treated with Dhatriloha yoga. The significant clinical improvement observed in the present study supports the therapeutic potential of these classical Ayurvedic formulations in the management of Bahupitta Kamala.

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