WORLD JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH
www.wjpmr.com

AN ETIOPATHOLOGICAL STUDY OF 'KAMALA' W.S.R. TO 'JAUNDICE' AND ITS UPSHAYATMAKA PARIKSHANA BY 'LAUHACHURNADI YOGA'

[1]*Dr. Rashmi Shukla, [2]Prof. Dr. Avadhesh Kumar, [3]Dr. Jai Shankar Prasad and [4]Dr. AsishKumar Garai

[1]JR, Department of Rog Nidan Evum Vikriti Vigyan, Government P.G. Ayurveda College and Hospital, Varanasi, UP.
[2] Professor (H.O.D), Department of Rog Nidan Evum Vikriti Vigyan.
[3]M.D(Ay.) Assistant Professor (Dept. of Kriya Sharir).
[4]M.D. (Ay.), Ph.D, Assistant Professor (Dept. of Kaumarbhritya).

*Corresponding Author: Dr. Rashmi Shukla

JR, Department of Rog Nidan Evum Vikriti Vigyan, Government P.G. Ayurveda College and Hospital, Varanasi, UP.

ABSTRACT

Ayurveda considers Jaundice (Kamala) as a disorder of Raktavahastrotas. Yakrit and pleeha are moolasthana of raktavahastrotas. Vitiated Pitta is the main causative factor in the pathogenesis of kamala. Kamala can be correlated with '**JAUNDICE**' in modern medical sciences. Jaundice is yellowishdiscoloration of the skin,body fluids, mucus membranesclera etc.due to hyperbilirubinemia.Increase serum bilirubin level occur when an imbalance exists between bilirubin production and clearance. Today's lifestyle with un- hygienic and poor dietary habits and alcoholic habits, etc are responsible factors to promote hepatic damage which is clinically reflected as *Kamala.* the classical signs and symptoms of Kamala i.e. Netra Peetata, Peet Vidmutrata, Aruchi Sadan etc, And also Upshayatmaaka Parikshana of Lauhachurnadi yoga in the remission of kamala were included for the study. After seeing the Observation and result itcame to know that Lauhachurnadi Yoga significantly reduces sign and symptoms of *Kamala* and specific biochemical markers like SGPT, SGOT, and Serum Bilirubin. From the statistical analysis, the P value was found < 0.001, Thus Lauhachurnadi Yoga is highly significant in *Kamala* and regulating bilirubin metabolism.

KEYWORDS: Kamala, Jaundice, Lauhachurnadi Yoga, Yakrit.

INTRODUCTION

Now a days modern culture, advanced technology, fast and sedentary life style have lead to irregular eating habits. Eating outside has become fashion which has increased the risk of contaminated food and water. And also there is lack of concern about *Dincharya*and *Ritucharya*. Irregular time of taking meals, *atikatu-amlalavan rasa sevan*, increase alcohol consumption, increase anger due to stressful life. All these etiological factors are responsible for vitiation of '*Pitta Dosha*" by causing increased *Dravata,Tikshanata,Sarata*,Guna of '*samyak pitta*". Hence most of the population suffers from 'Agnimandhya",Aruchi, Fatigue, Avipak, Indriyadaurbalyaharidravarnata, etc. which are the common symptoms of pittajvyadhi like *KAMALA*. Most of the times, patients just come with weakness and tiredness. Later on, it will be diagnosed as Kamala(jaundice).The incidence of such diseases areincreasing day by day. In Ayurveda 'Kamala" vyadhi is known from 'Vedic kala".Aacharya's of Bhrihatrayee i.e. Maharshi Charak has considered Kamala as Pravardhamanawastha of Pandu Roga. . AcharyaSushruta has considered Kamala as separate disease as well as further complication of Pandu roga. Acharya Vagbhata has described Kamala as 'SwatantraVyadhi'.According to aacharyaCharakKamala is a '*Nanatmajavyadhi'* of pitta dosha and '*Raktapradoshajvikar.*

Kamala is caused by two different ways. The first one is-Excessive consumption of *pitta prakopakaaaharvihar* by pandurogi then aggravated pitta burns the 'Rakta and Mansa and manifest'**BahupittaKamala'**{Kosthashrita Kamala}. And the second is-excessive intake of ruksha,sheeta,guru and madhuraaharvihar, ativyayam and veganigraha,Diwaswapnaetc.increaseskapha and vata which obstruct pittavahashrotasa causes **ruddhapath kamala**{Shakhashrita kamala}.Since there is no pitta in pakwashaya, hence itproduces **Tilpishtanibhavarchas. (Ch.chi.16/124).**

Kamala can be correlated with '**JAUNDICE**' in modern medical sciences. Jaundice is yellowishdiscoloration of the skin,body fluids, mucus membranesclera etc.due to hyperbilirubinemia.Increase serum bilirubin level occur when an imbalance exists between bilirubin production and clearance. Jaundice may be of different types. In **Hemolytic jaundice**more bilirubin is found in blood due

to excessive destruction of RBC and is not excreted out. When bile duct is obstructed by gall stone or other causes and bile is accumulated in liver and causes hyperbilirubinemia called**Obstructed jaundice.** In **Hepatocellular jaundice** there is completely or partially obstruction by edematous hepatocytes.

The presence of jaundice is usually, but not always a sign of liver diseases. The liver plays a major role in the maintenance of metabolic Homeostasis. The development of clinically important liver disease is accompanied by diverse manifestation of disordered metabolism. Jaundice is the most reliable marker of the severity of liver diseases.

As per W. H. O, the total number of 192 cases of jaundice were detected during the 12 month study period, from an annual incidence of 2.76/1000 population in India. Almost 60% of these cases occur during the summer and monsoon(June-September),suggesting a feco-oral mode oftransmission.

In this study, Upshayatmaaka Parikshana of Lauhachurnadi yoga was done in the remission of many subjective and objective criteria kamala. According to 'Yogratnakar' the content of Lauhchurnadiyoga is Lauhabhasma, Haridra, Kutaki, Triphala, and Kutaki with Sahpaanmadhu and sarpi . In this study, selection of Lauhachurnadiyoga is done on the basis of the fact that these ayurvedic herbo-mineral preparations act on the root of disease i.e. on vitiated Pitta dosha by their tikta rasa,sheetavirya, mraduvirechaka, raktavardhan and sarakguna etc. and thus these herbs are pitta shamaka. Also this herbo- mineral preparation is cost effective as perthe socio-economical status of the patients.

AIM AND OBJECTIVE

- To study the literatures pertaining to Kamala and jaundice in different Ayurvedicsamhitas and modern literature.
- UpshayatmaakaParikshana of Lauhachurnadi yoga in the remission of kamala.
- To evaluate the efficacy of Lauhachurnadi yoga in hyperbilirubinemia & elevated SGOT,SGPT levels.

Plan o f Study
➢ Review of Literature
➢ Clinical study
➢ Observation and Result
➢ Discussion
➢ Summary and conclusion

Review of Literature :- In this part, literary review about 'Kamala' hadbeen collected from classical text of Ayurveda thesis of previous research work, scientific journal, periodic magazines, monographs & other available source. Similarly modern review of the disease Jaundice had been collected from modern medicine books & various websites on internet and these have been properly compiled, analyzed, classified and then it had been presented on arranged manner.

- **Disease review**: In this section, detailed description about Kamala as an Ayurvedic point of view and modern point of view.
- **Drug review**: comprising brief review of drugs involved in the LauhachurnadiYoga.
- **Clinical study.**

MATERIAL AND METHODS

- **Source of data:-**For the study total 60 patients which is fulfilling the clinical criteria for the diagnosis of Kamala have been selected from the OPD and IPD of Rajkiya P.G.Ayurveda College, Varanasi.
- **Method of collection of data:-**The patients have been diagnosed on the basis of ayurvedic and modern parameters. Clinical sign and symptoms described in classical texts was considered for the diagnosis of kamala.

Inclusion criteria
1. Patients having sign and symptoms of Kamala as described in Ayurvedic literatures and also having signs and symptoms of Jaundice as per as modern medicine.
2. Patients having raised Serum Bilirubin >2.5 mg / dl.
3. Patients between age group of 18 to 70 years of both sexes.
4. Pandujanya kamala.
5. Newly diagnosed patients of Jaundice.
6. Koshthashakhashrita kamala (Haemolytic Jaundice and Hepatocellular Jaundice).

Exclusion criteria
1. Pregnant lady.
2. Age below 18 years and above 70 years.
3. Liver cirrhosis Liver Cancer, Liver abscess and HCV and HbsAg caused Hepatitis
4. Kamala with upadravas and kamala occurring as a upadrava in other diseases.
5. Hyperbilirubinemia due to autoimmune disorder.
6. Patients with uncontrolled diabetes and uncontrolled hypertension.
7. Patients having immune compromised disease like HIV, T.B. etc.
8. Shakhashrita Kamala (Obstructive Jaundice).

DIET AND RESTRICTIONS
Patients were advised to follow the pathaya and apathaya available in Ayurvedic literature on'KAMALA'**.**

Assessment criteria:- Assessment of patients were done on the basis of following aspects:- 1-*ETIOLOGICAL FACTORS*:- on the basis of etiological factors at the time of admission.

Aaharaj Nidana	+ or _	Viharaj Nidana	+ or _	Mansika Nidana	+ or _	Vyadhi Nimmitaj Nidan	+ / -
Exersice intake of Amla, Lavan, Katu, Kshar, Ushana Tikta Aahar(Intake of hot, spicy & junkfood)		AtiVyayam (Excessiveexercise)		Kama		Pandujanya	
Tila, Sarsap, Atasi, Tailaatisevan		Vega vidharana (stoppage of natural urge)		Krodha			
Vidagad ha anna		Divaswapna		Bhaya			
Viruddha anna				Irshya			
Madya pana				Shoka			
Kulatha, Mansa, Nishpava etc. sevana							

2- SUBJECTIVE CRITERIA:-On the basis of sign and symptoms:-Grading of Parameters.

S.N.	Grade 0	Grade 1	Grade 2	Grade 3
NetraPitata	Absent	Mild	Can be seen insunlight	Can be seen without sunlight
Peet Mutrata	Normal in urine colour	Yellowish coloured urine	Dark yellow coloured urine	Highly coloured urine
Jwara	Absent	Temp. b/w 99^0-100^0F	Temp. b/w 100-102^0F	Temp. above102^0F
Sadan	No weakness	Weakness not disturbing dailyroutine work	Weakness disturbing dailyroutine work	Weakness required complete bedrest
Avipaka	Normal stool	Heaviness inabdomen	Heaviness with sticky hard stool	Heaviness withconstipation more than 2-3 days
Udarshool	Absent	Mild	Moderate	Severe
Aruchi (anorexia)	Normal	Less desire to eat	Less desire to eatwith nausea	No desire to eatwith severe nausea
Daha	Absent	Mild	Modarate	Severe

3- OBJECTIVE CRITERIA
- Hb%, ESR, LFT values before and after was assessed.
- The statistical analysis of these values would be done before the start of the Upashayatmaka parikshana and finally after the completion of Upshayatmaka parikshana.

PATHOLOGICALINVESTIGATIONS

Sr.no		B.T.	A.T
1	Hb%		
2	TLC		
3	Platelets		
4	ESR		
5	Serum Bilirubin(total)		
6	Unconjugated Bilirubin		
7	Conjugated Bilirubin		
8	S.G.O.T.		
9	S.G.P.T.		
10	Al. Phosphatase		

Serological Investigation
- HIV, HCV, HBsAg

Radiological Investigation
- USG
- Anti Malarial Test (If Required)

Criteria for Assessment of overall Effect of Therapy:-
The treatment effect was assessed weekly on the basis of the relief of sign and symptoms of the disease on scoring pattern by specially designed proforma:-
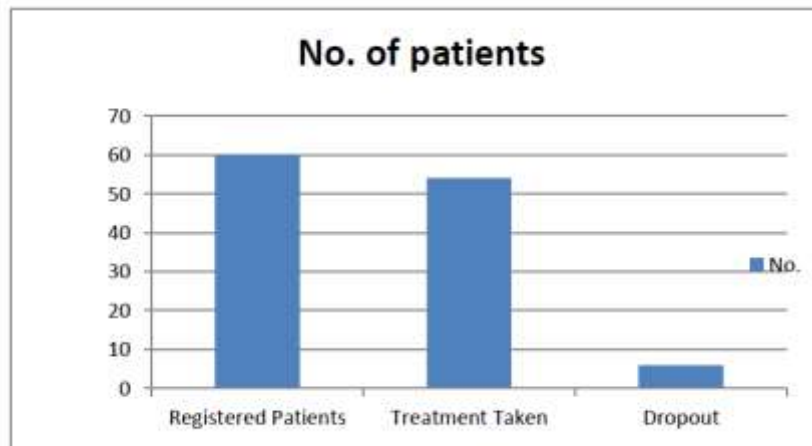
Observation and Result

| 1	Marked improvement	>75% Relief in sign and symptoms and S. bilirubin within the normal range
2	Moderate improvement	51%-75% Relief in sign and symptoms
3	Mild improvement	25-50% Relief in sign and symptoms
4	No improvement	<25% relief in sign and symptoms

OBSERVATION AND RESULT
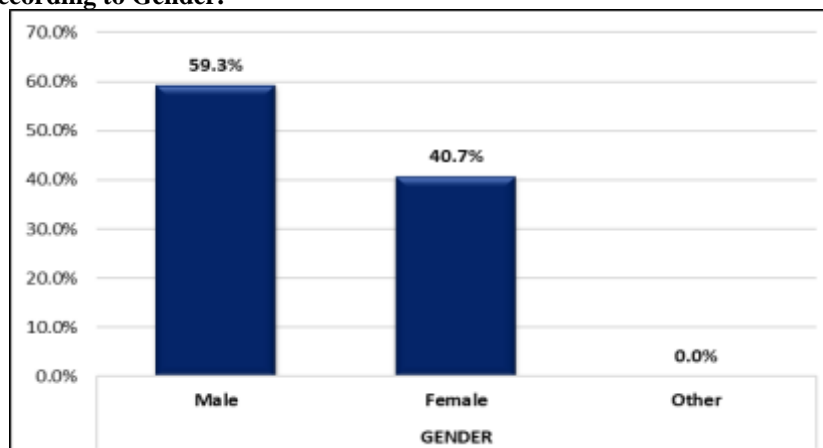- **Distribution of Study Cases**

The study included a total of 60 registered patients who participated in the research. Among these, 54 patients actively underwent the specified treatment regimen. 6 patients were left out.
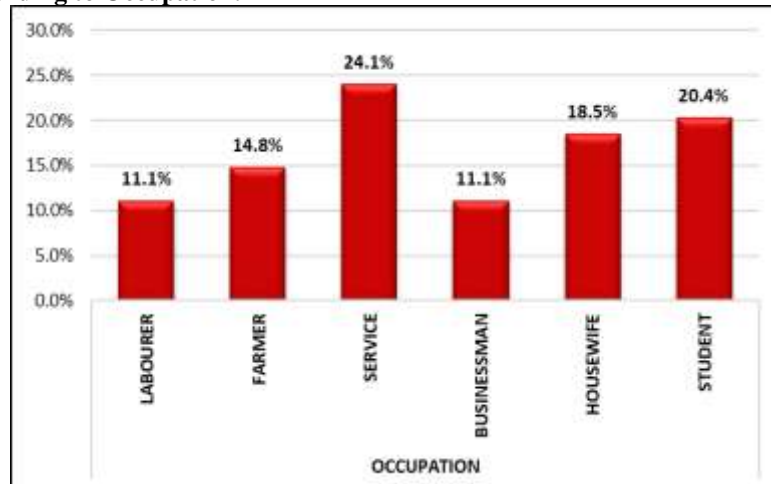
- **Distribution According to Age**
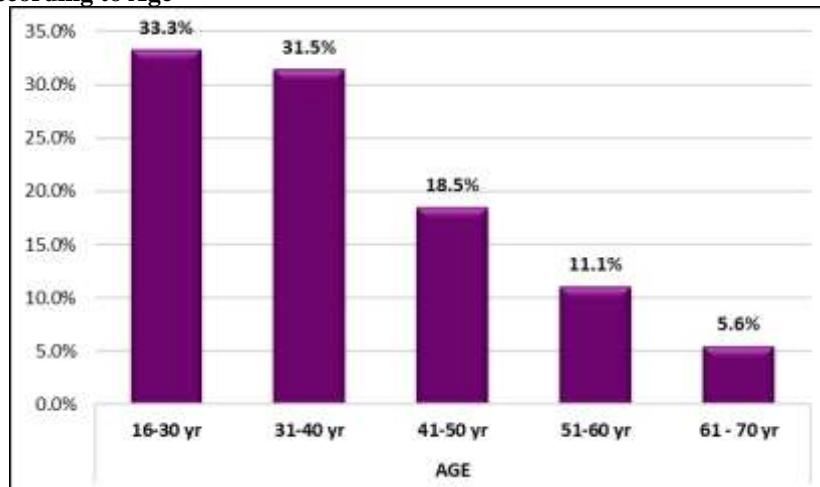
In this study maximum 64.8% patients were of middle age group that is 16 to 40 years.
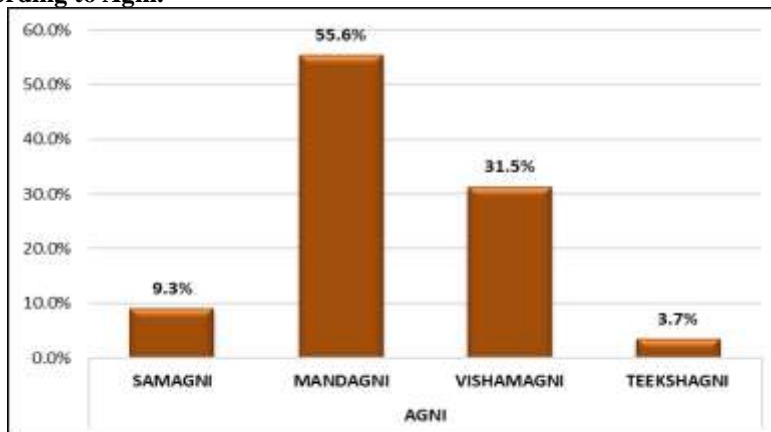
- **Distribution According to Gender.**

The gender distribution of the participants in the study revealed that 59.3% were male, making them the majority. On the other hand, 40.7% of the participants were female.

- **Distribution According to Occupation.**

The distribution among these occupational categories was as follows: 11.1% were Labourers, 14.8% were Farmers, 24.1% were engaged in Service-related work, 11.1% were Businessmen, 18.5% were Housewives, and 20.4% were Students.

- **Distribution According to Agni.**

The distribution among these Agni types was as follows: 9.3% had "Samagni," 55.6% had "Mandagni," 31.5% had "Vishamagni," and 3.7% had "Teekshagni."
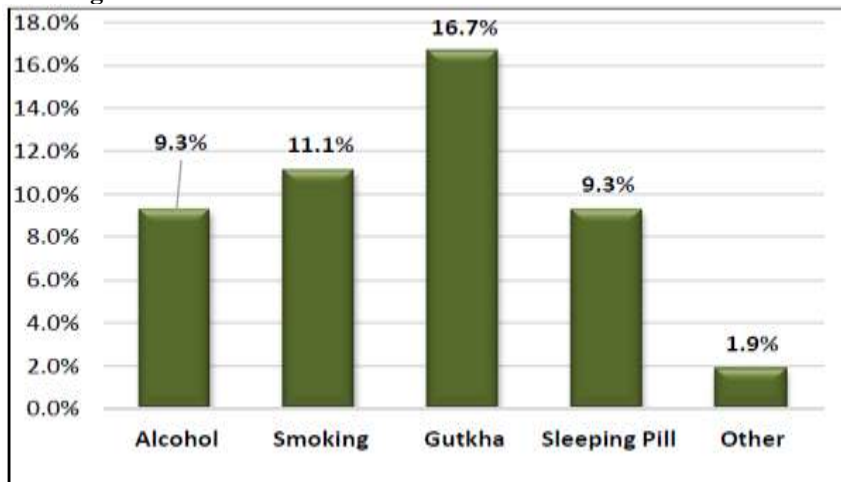
- **Distribution According to Education**
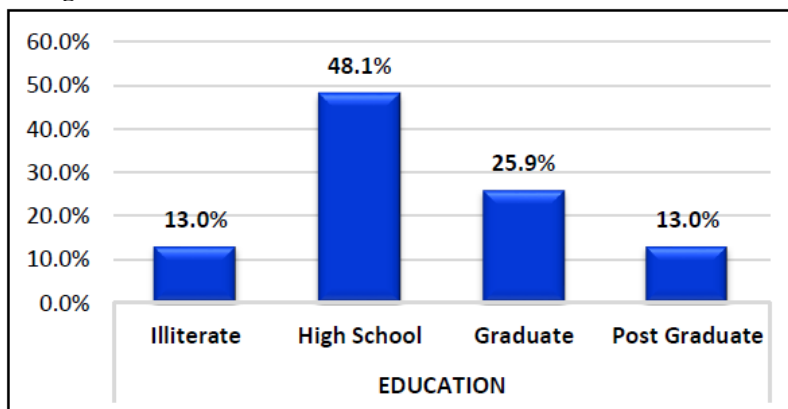
The distribution among these education levels was as follows: 13.0% were "Illiterate," 48.1% had completed "High School," 25.9% were "Graduate," and 13.0% had completed "Post Graduate" studies.

• **Distribution According to Socio-Economic Status.**
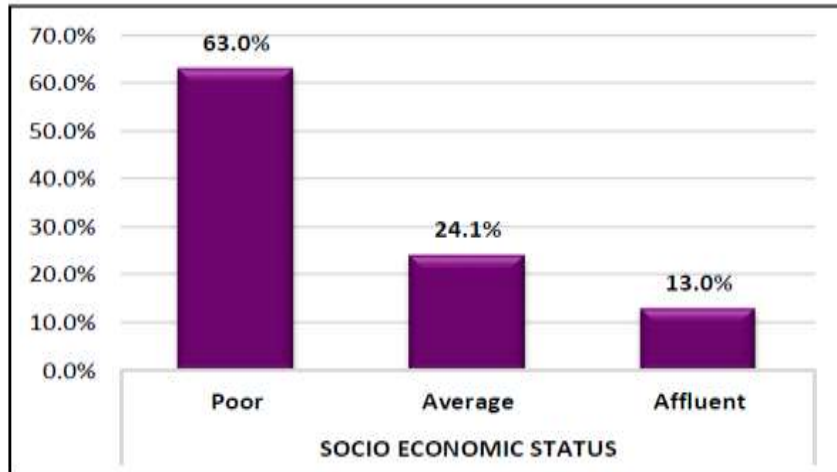
In this study 61.1% patients were less educated. Less educated People do not know much about hygiene and its importance in healthy life.

• **Distribution According to Addiction.**

Approximately 9.3% of participants reported addiction to alcohol. Smoking addiction 11.1% of the participants. Gutkha was reported by 16.7%. About 9.3% of participants useed sleeping pills.
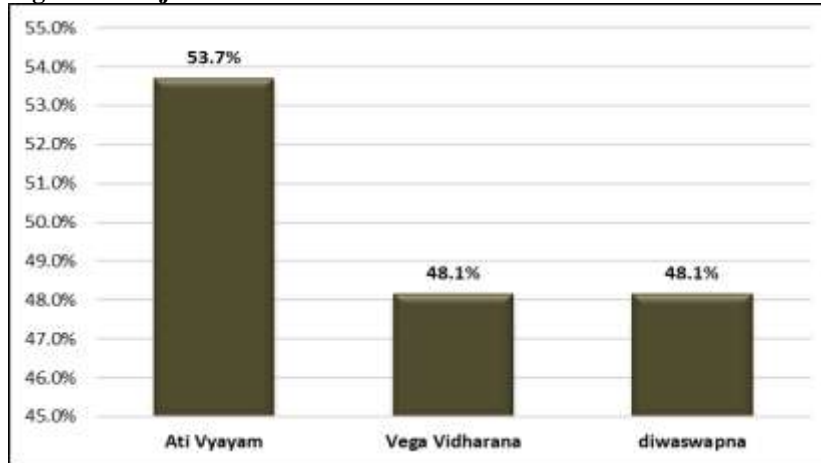
• **Distribution According to Nutrition:**
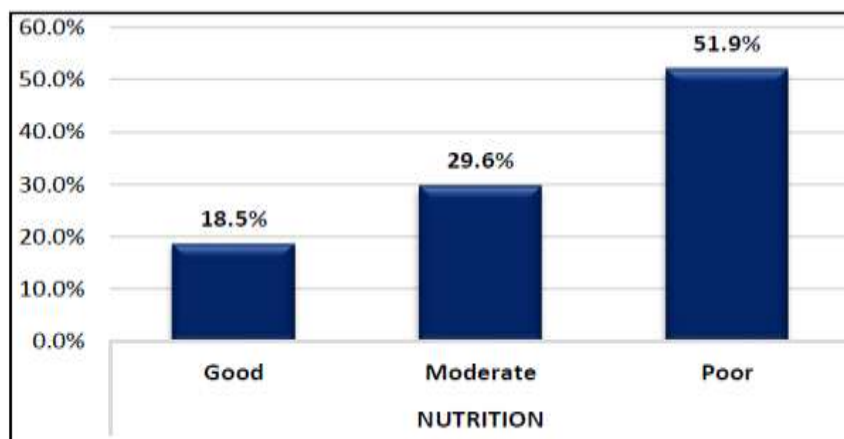
In this study maximum 51.9% were classified as having poor nutrition, indicating potential deficiencies in their dietary choices.

- **Distribution According to Aharaj Nidan**
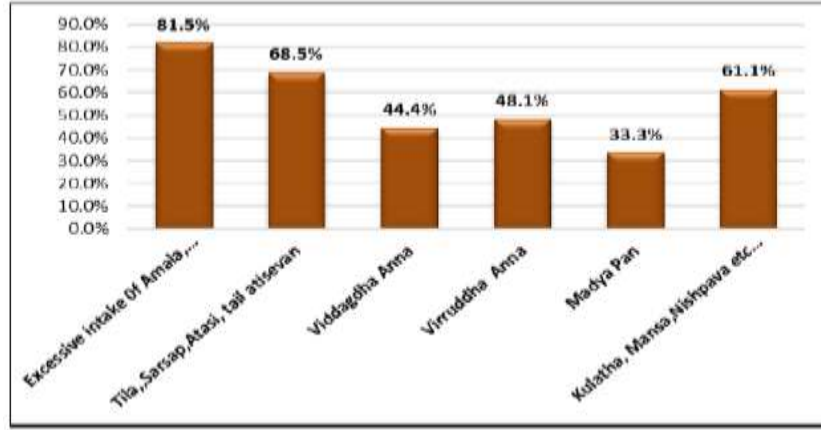
The study reveals that maximum portion of participants, accounting for 81.5%, had a history of excessive intake of foods that are categorized as Amala (sour), Lavan (salty), Katu (spicy), Kshar(alkaline), Ushna (hot), and Tikta (bitter) in nature.
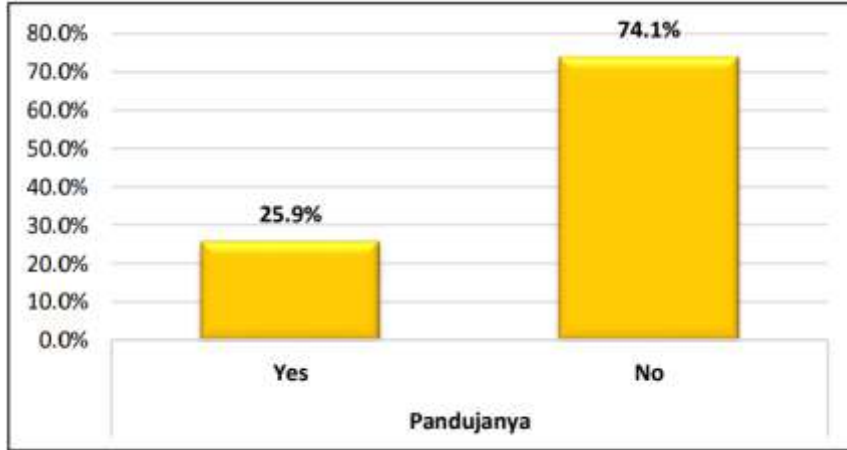
Distribution According to Viharaj Nidan.

Majority of patients (53.7%) were found ativyayam followed by vegasandharaṇa (48.1%), andDiwaswapna(48.1%).

- **Distribution According to Mansik Nidan.**
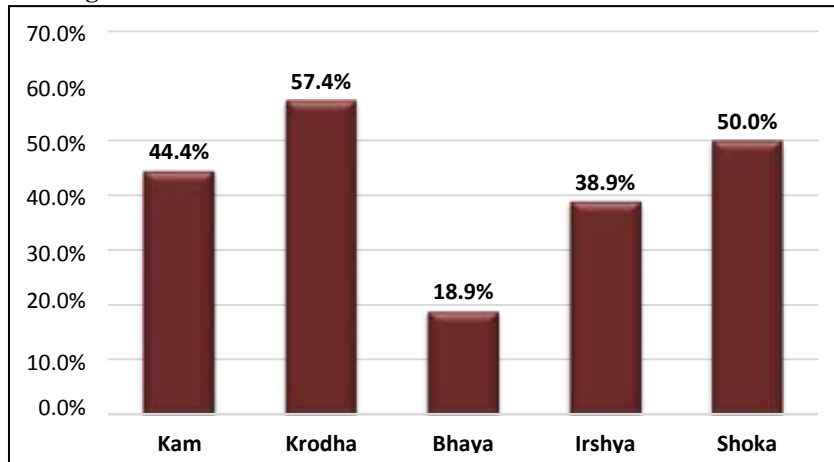


In this study, 44.4% of respondents admitted to feelings of Kam (desire), 57.4% reported Krodha (anger), and18.9% indicated feelings of Bhaya (fear). Additionally, 38.9% expressed feelings of Irshya (envy), while 50.0% revealed experiencing Shoka (grief).

- **Distribution According to Vyadhi Nimmitaj Nidan.**

Notably, 74.07% of respondents reported experiencing Pandujanya (disease-related factors), while 25.92% not having Pandujaanya Kamala.

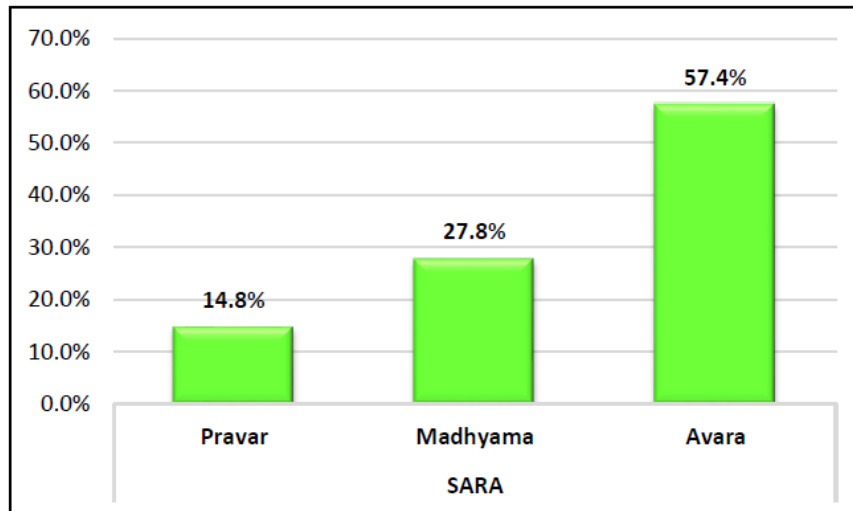- **Distribution According to Sambhavita Nidana**
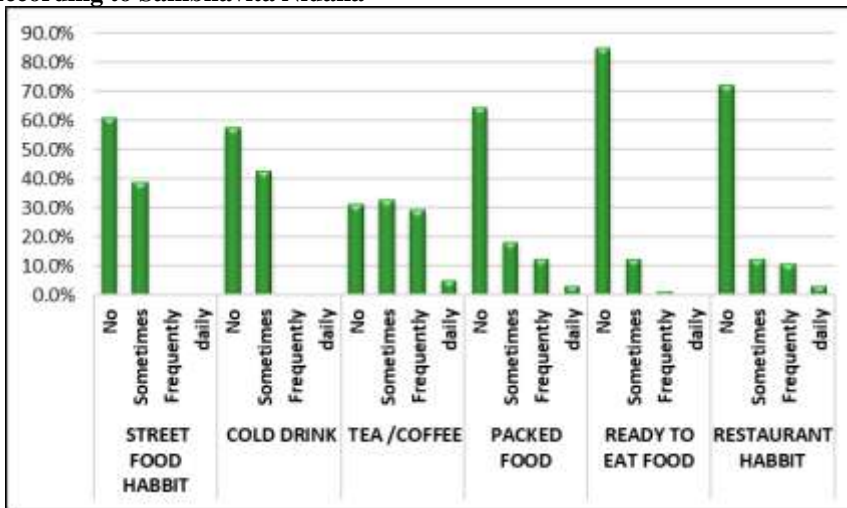
In this study Regarding street food consumption, 38.9% indicated consuming street food occasionally. Similarly, 42.6% of participants reported consuming cold drinks etc.
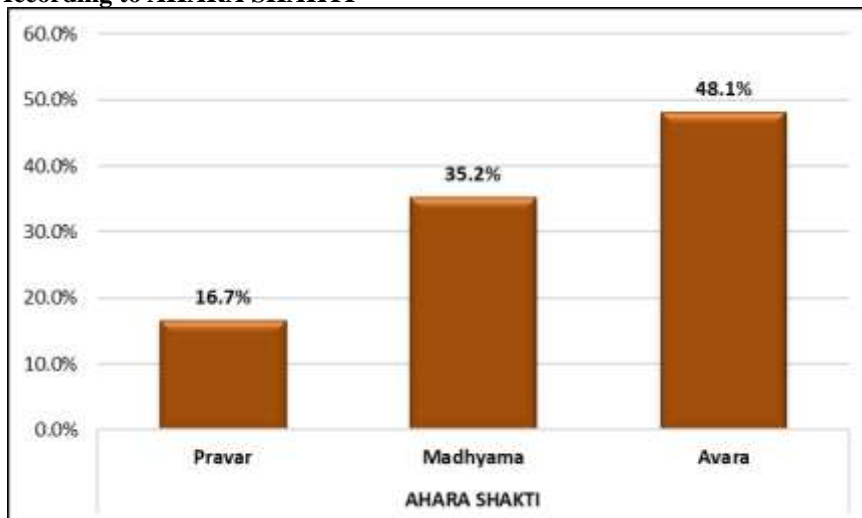
- **Distribution According to Prakriti.**
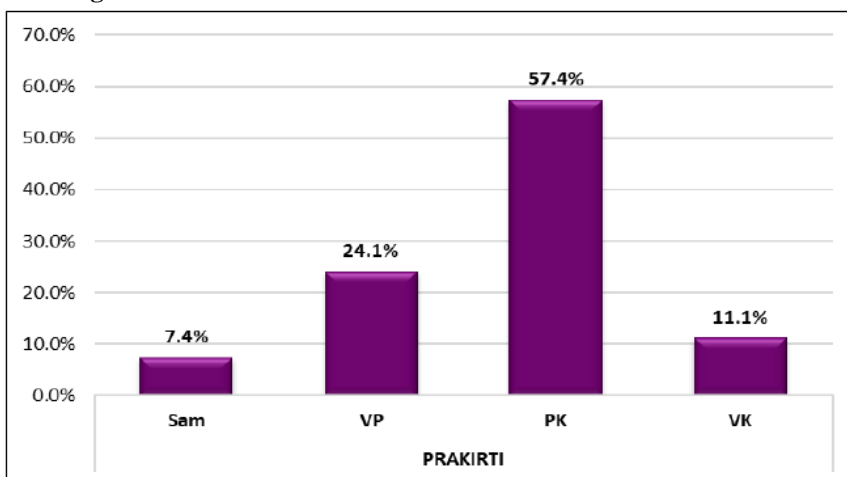
In this Study maximum 57.4% patients were found of Pitta- kaphaja Prakriti.
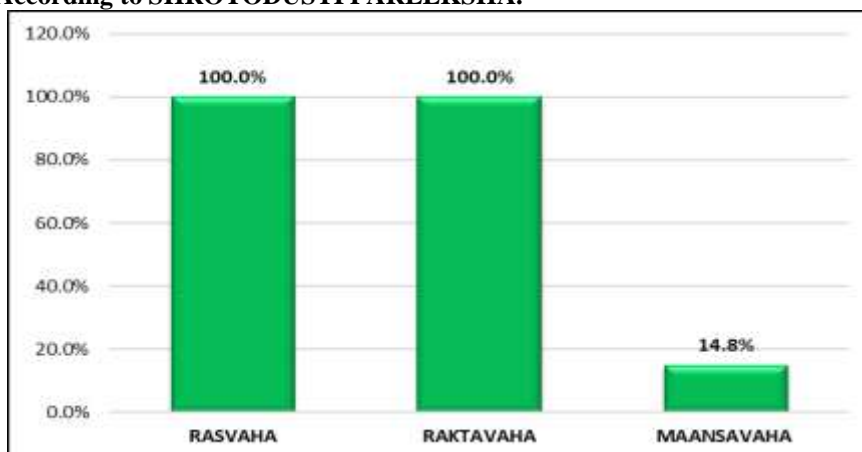
- **Distribution According to Sara**

In this study maximum participants that is 57.4% were found with "Avar" Sara.
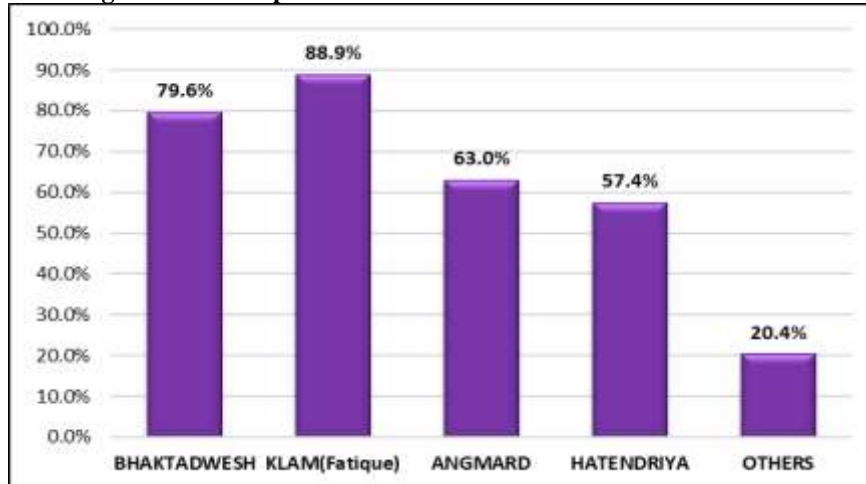
- **Distribution According to AHARA SHAKTI**

In this study maximum 48.1% participants had 'Avar' Aharshakti due to Agnimandhata inKamala patients.

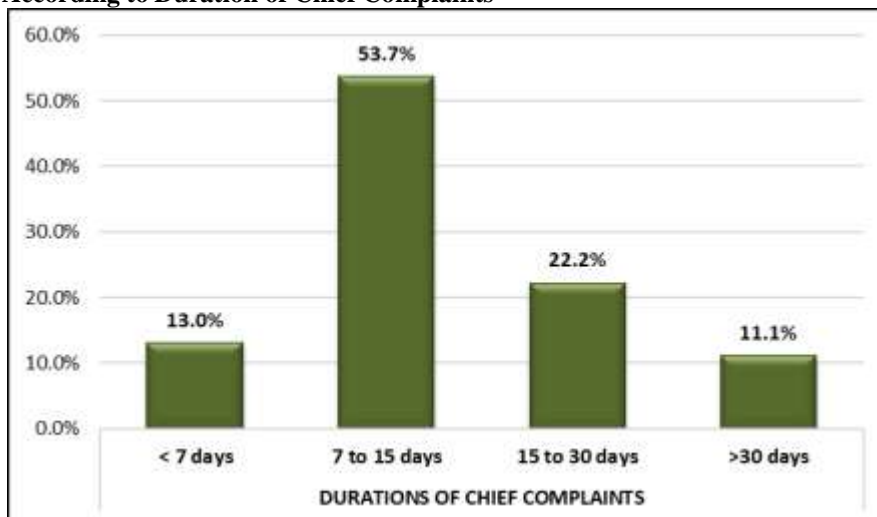- **Distribution According to SHROTODUSTI PAREEKSHA.**

Among the participants, 100.0% exhibited involvement of the "Rasvaha" Shrotas and Raktavaha Shrotodusti.

- **Distribution According to Chief Complaints**

In this study maximum 88.9% reported Klam and Among the participants, 79.6% reported "Bhaktadwesh etc.

- **Distribution According to Duration of Chief Complaints**

The In this Study Around 13.0% of participants reported experiencing their chief complaints for less than 7 days,. A larger proportion, 53.7%, reported a duration of 7 to 15 days.22.2%, 15-30 days and >30 days was 11.1%.

SUBJECTIVE CRITERIA
Comparisons of Subjective Criterion Before and After TrialNetra Peetata.
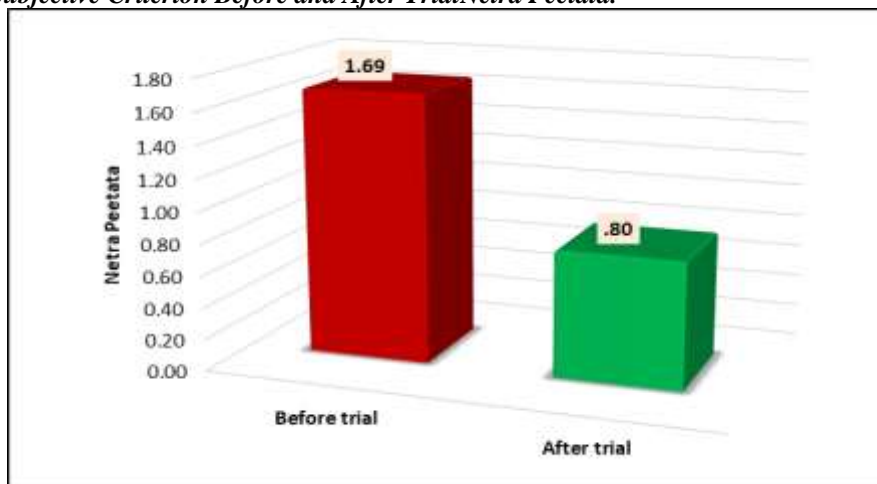
The percentage change in this parameter was approximately 52.75%.

Peet Vidmutrata
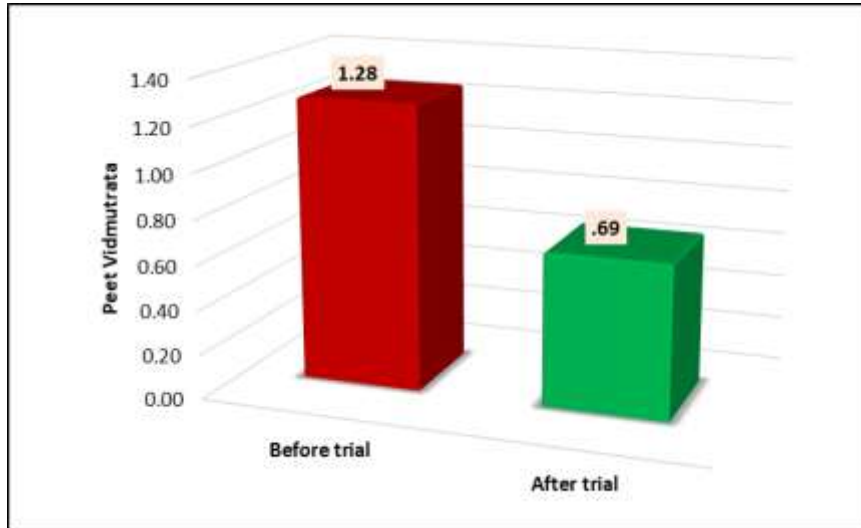
The percentage change in this parameter was around 46.38%.

Jwara
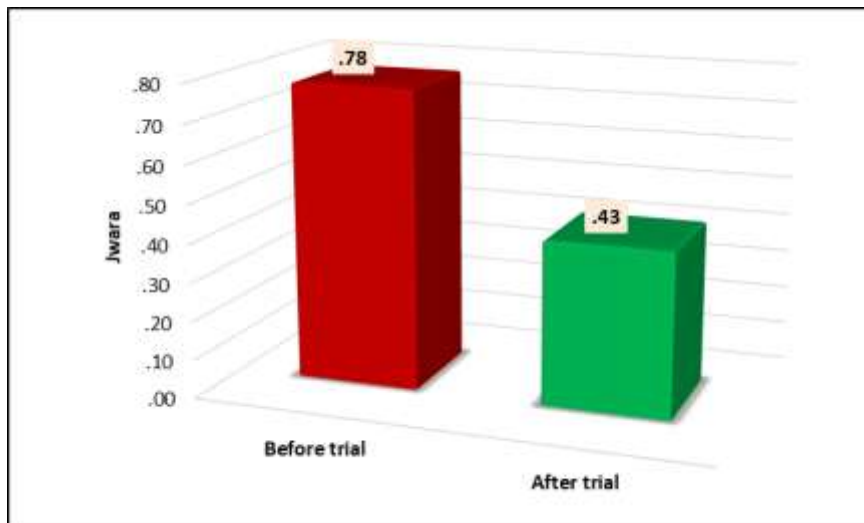
The percentage change in this parameter was about 45.24%.

Sadan (Malaise)

The percentage change in this parameter was approximately 54.93%.

Avipaka (Indigestion)

The percentage change in this parameter was around 47.54%.

Udarshool (Abdominal Pain)
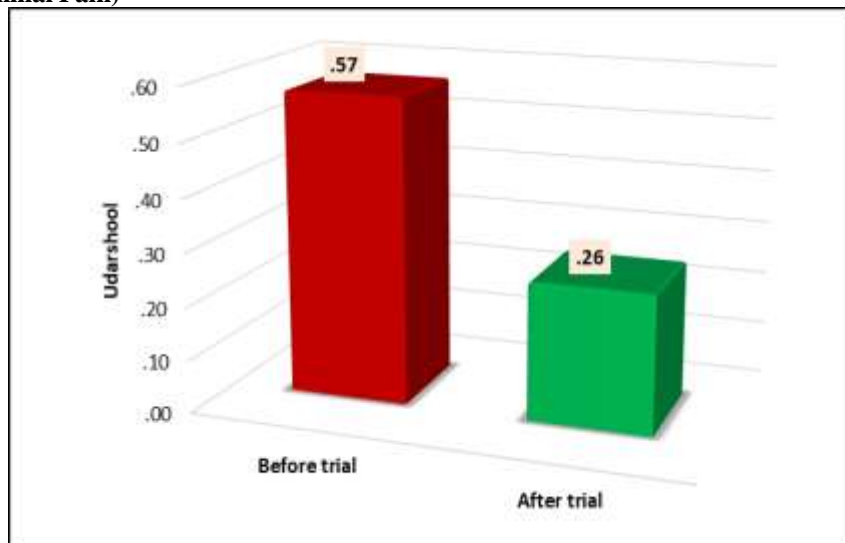
The percentage change in this parameter was about 54.84%.

Aruchi (Anorexia)
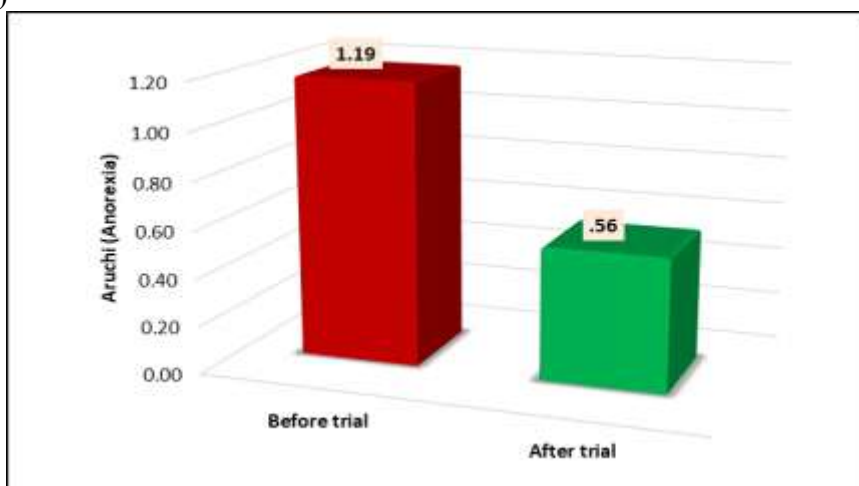
The percentage change in this parameter was approximately 53.13%.

Daha
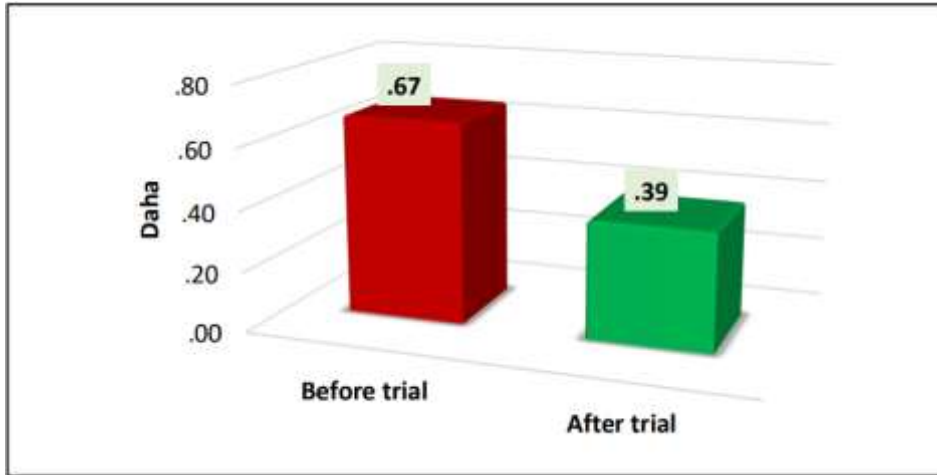
The percentage change in this parameter was around 41.67%.

OBJECTIVE CRITERIA
- **Before and After Trial Distribution of Hb%**
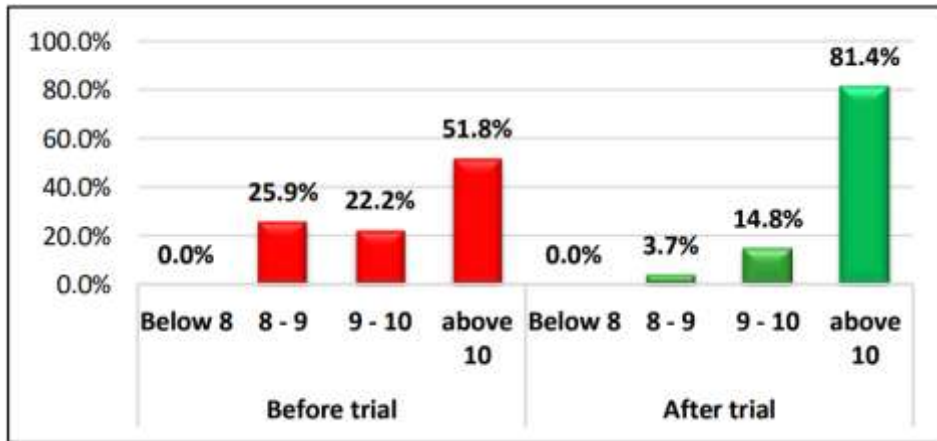
- **Before and After Trial Distribution of TLC**
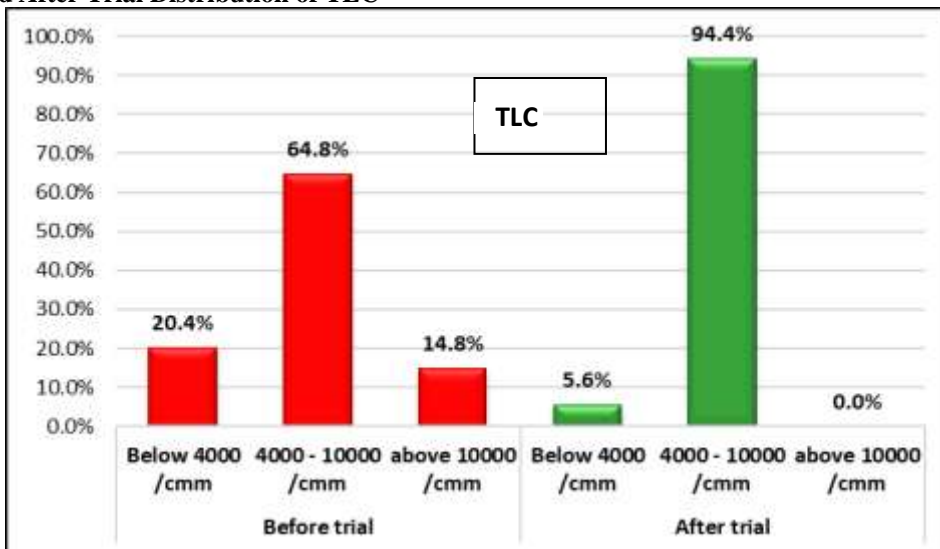
- **Distribution of ESR**
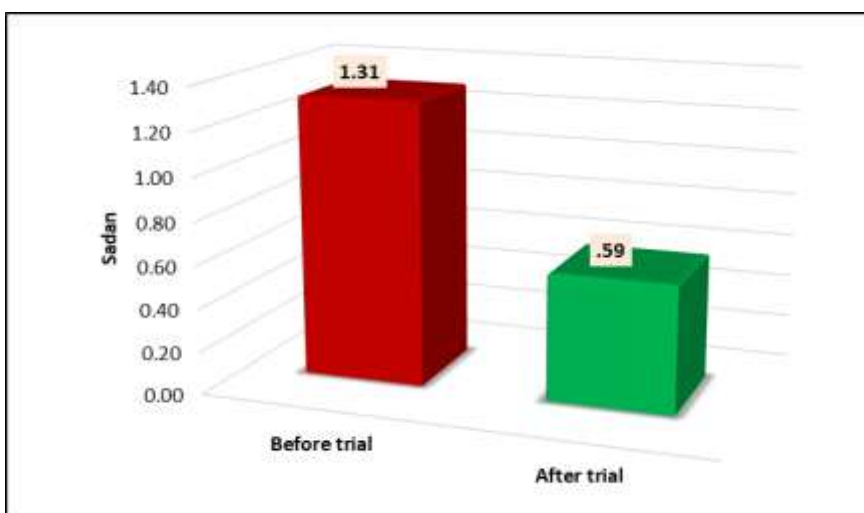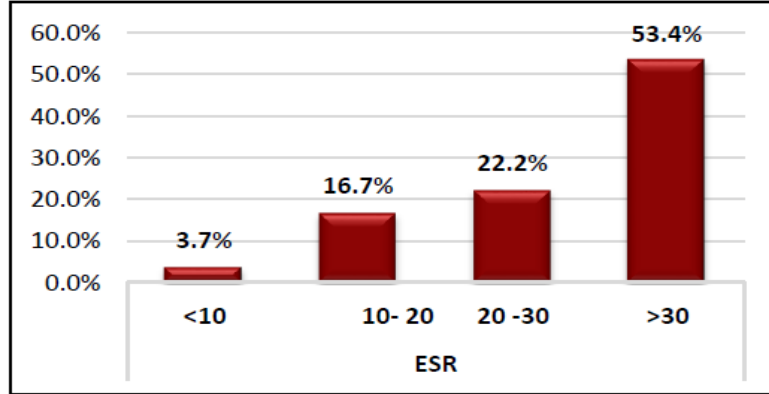

- **Before and After Trial Distribution of Serum Bilirubin Total**
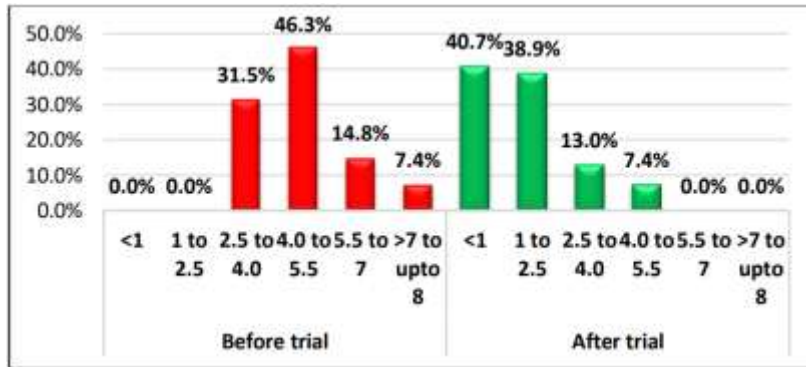
- **Before and After Trial Distribution of Serum Bilirubin Direct**
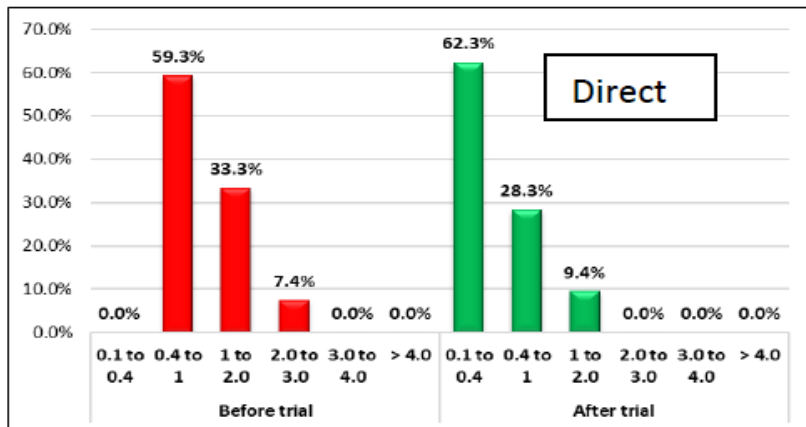
- **Before and After Trial Distribution of Serum Bilirubin Indirect**
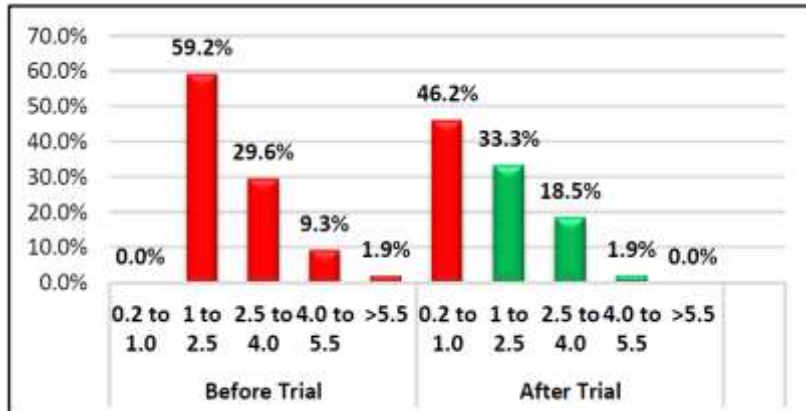
- **Before and After Trial Distribution of Alanine Transaminase (ALT)**
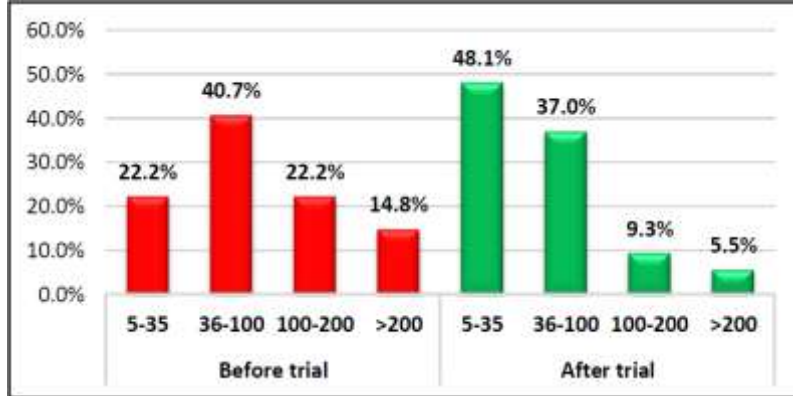
- **Before and After Trial Distribution of Aspartate Aminotransferase(AST)**
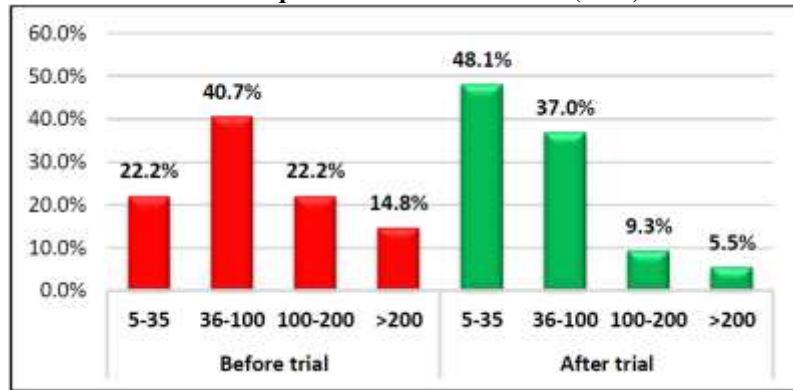
- **Before and After Trial Distribution of Alkaline Phosphatase (ALP)**
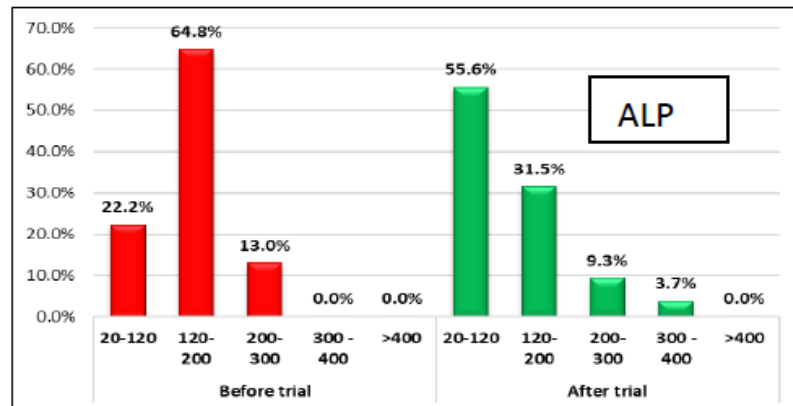
- **Viral Marker Reports**
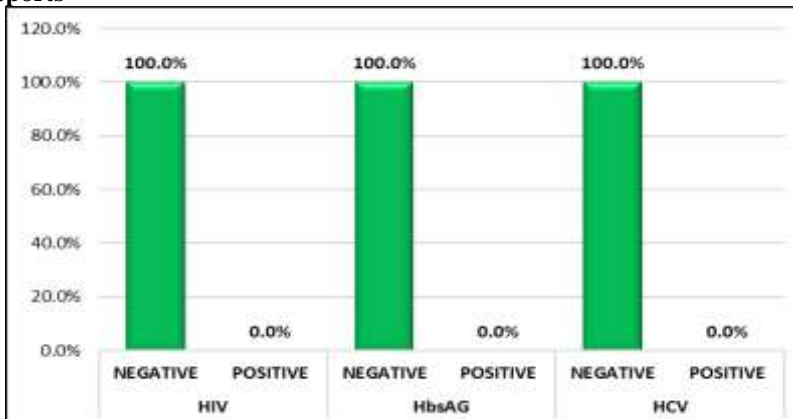
Before and After Trial Distribution of Bile Sample
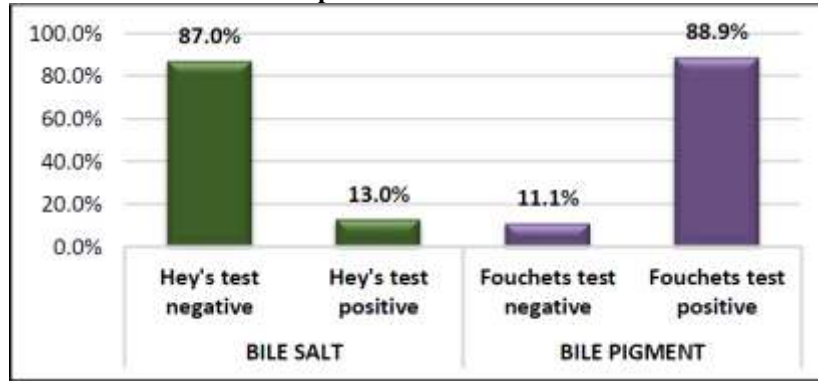
❖ **RESULTS**
⬇ **EFFECT OF LAUHACHURNADI YOGA IN SUBJECTIVE PARAMETERS:**

Parameter	Before trial		After trial		Wilcoxon test			SIGNIFICANCE
	Mean	SD	Mean	SD	% change	z-value	p-value	
Netra Peetata	1.69	0.80	0.80	0.96	52.75	-4.47	**<0.001**	**HS**
Peet Vidmutrata	1.28	0.81	0.69	0.86	46.38	-4.05	**<0.001**	**HS**
Jwara	0.78	0.84	0.43	0.81	45.24	-3.52	**<0.001**	**HS**
Sadan	1.31	0.97	0.59	0.86	54.93	-5.03	**<0.001**	**HS**
Avipaka	1.13	0.93	0.59	0.88	47.54	-4.20	**<0.001**	**HS**
Udarshool	0.57	0.63	0.26	0.59	54.84	-3.71	**<0.001**	**HS**
Aruchi (Anorexia)	1.19	0.87	0.56	0.82	53.13	-4.87	**<0.001**	**HS**
Daha	0.67	0.85	0.39	0.66	41.67	-2.56	**<0.001**	**HS**
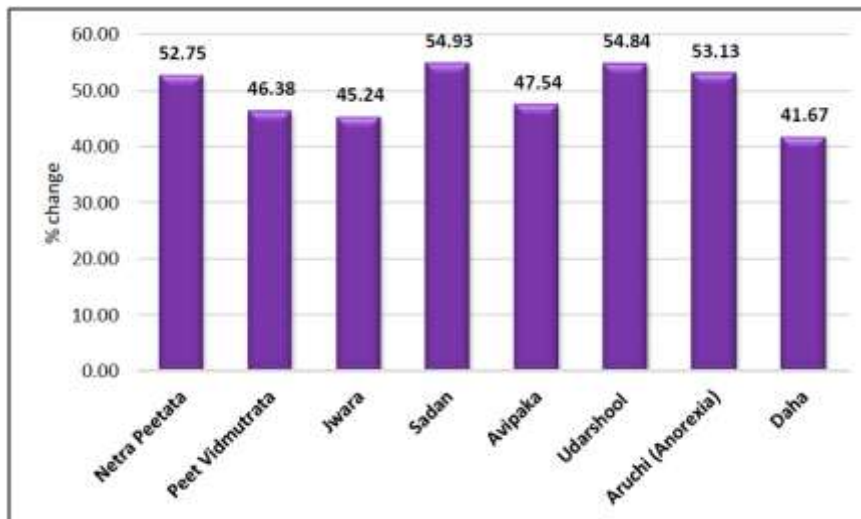
⬇ **EFFECT OF LAUHACHURNADI YOGA IN OBJECTIVE PARAMETERS:**

Parameter	Before trial		After trial		mean change	Paired t test		SIGNIFICANE
	Mean	SD	Mean	SD		t-value	p-value	
Hb	9.92	1.21	11.10	1.98	1.18	-5.56	**<0.001**	**HS**
TLC	7158.33	2696.13	6601.48	1555.17	556.85	1.90	0.063	NS
ESR	31.80	13.30	24.78	12.27	7.02	4.12	**<0.001**	**HS**
Sr Bilirubin Total	4.87	1.21	2.47	1.75	2.40	9.56	**0.000**	**HS**
Sr Bilirubin Direct	1.74	0.59	1.49	0.73	0.25	1.93	0.060	NS
r BilirubinIndirect	2.94	1.23	2.26	1.26	0.67	3.19	**0.002**	**HS**
ALT	71.65	36.62	56.26	25.11	15.39	2.54	**0.014**	**S**
AST	81.28	36.36	74.81	37.37	6.46	2.04	**0.046**	**S**
ALP	139.80	64.08	141.59	43.07	-1.80	-0.27	0.785	NS

OVERALL EFFECT OF LAUHACHURNADI YOGA IN KAMALA:
Final Improvement Status

Overall	No.	%
Marked improvement	24	44.4%
Moderate improvement	15	27.8%
Mild improvement	10	18.5%
No improvement	5	9.3%

- **DISCUSSION**

The Discussion section of the study deals with meaning, importance, relevance and analyses of the therapeuticallyeffect on the selected problem through observations and results to focus on the research question, aim, andobjectives.

➢ **Age:** In this study maximum 64.8% patients were of middle age group. This period is considered as a vitiated pitta dosha period and elevated pitta is the first step of the Kamala rog samprapti.

➢ **Gender:** In the study the gender distribution of the participants revealed that 59.3% were male... Male patients were more than that of female patients. This may be due to the fact that the addiction is more common in males, which is the one of the cause of KAMALA.

➢ **Occupation:** In this study, maximum patients i.e., 44.5% were servicemen and students. The reason behind this may be servicemen and students eat outside food more frequently and Unhygienic oily and spicy food is one of the main reason of Kamala Vyadhi.

➢ **Agni:** In This Study Maximum patients(55.6%) had Mandagni because Yakrut being a site of Agni and in Kamala the most effected part is Yakrit . if liver is affected then agniis also compromised so Mandagni is found in maximum in number..

➢ **Education:** In this study 61.1% patients were less educated. Less educated People do not know much about hygiene and its importance in healthy life. And also which food is good for liver or not like oily,spicy, junk food etc so they easily fall to disease like Kamala.

➢ **Socio-Economic Status:** In this Study 63% participants were from poor societies . This may be due to poor people often live and work in dirty places and they don't take care of Hygiene. they don't even eat very nutritious food. That's why they fall prey to diseases quickly.

➢ **Addiction:** Approximately 9.3% of participants reported addiction to alcohol. Smoking addiction was present among 11.1% of the participants. Addiction to gutkha was reported by 16.7% of the participants. About 9.3% of participants reported addiction to sleeping pills, betal nut etc.Addiction in the form of alcohol, tobacco, smoking, betal nut etc is a prevailing cause of Yakrutvikara. These dravyas are Ushna, Tikshna, Vyavayi and due to these properties they vitiate Pitta dosha and Raktadhatu. Yakrut being abode of Raktadhatu, addiction is an evident cause of Kamala.

➢ **Sleep:** In this Study The maximum Patients were found with disturb sleep which leads to the imbalance of Agni that produces Ama Dosha. This Aam dosha vitiates vata and pitta leads to Kamala.

➢ **Nutrition:** Maximum 51.9% patients were having poor nutrition. This is may be due to poor nutrition weakens immunity and due to low immunity, the risk of getting disease increases. And also poor nutrition leads to Rasvaha and Ratavaha shrotodusti which is the main samprapti ghatak of Kamala Vyadhi.

➢ **Aharaj Nidan:** Mentioned etiological factors provoke Pitta, with their specific qualities. **"*Agnirevashareere Pittantargatha*"** Agni has its seat in Pitta. Pitta is composite fluid having Ushna and teekshna properties enough and sufficient to digest the food. With the above- mentioned Nidana person with vitiated Pitta and Agni is unbalancing the functions ofliver where mala roopa Pitta is discharged.

➢ **Viharaj Nidan:** Excessive vyayama leads to Pitta and Vata Dosha prakopa takes place further it leads to dhatukshaya, simultaneously impaired the kayagni.

➢ **Mansik Nidan:** In this study maximum 57.4% patients reported with Krodh(anger). Krodha vitiates pitta dosha and elevated pitta vitiates Rakta dhatu. According to ayurveda classics. Mental stress is a cause of Rasa and Raktadhatudushti, leading to Yakrutvikara.

➢ **Vyadhi nimmitaj nidan:** In this Study maximum 74.9% Participants reported without Pandu. If Pandu Rogi consumes Pitta aggravating factors like sour food, kshar, Katu,Vidahi Aahar etc aggravated pitta which burns the Rakta and Mansa and Manifest Kamala.

➢ **Sambhavita nidana:** Lifestyle and dietary habits play a significant role in shaping health outcomes. The study findings shed light on the prevalence of certain Sambhavita Nidana (probable causative factors.

- In this study Regarding street food consumption, Street foods are mainly prepared in Palm oil and refined oil.these oils are Gurupaki,Snigdha, Ushana in nature which causes Mandagni and elevation of pitta.

- Similarly Cold Drinks lead to fructose overload in liver leads to causes severe liverdiseases.

- Tea/coffee contains nicotine, thein, caffien and other alkaloids which causes hyper secretion of acid. This acid suppress the activity of Liver causes Anorexia and other Liverdiseases like Jaundice.

- Packed food and ready to eat food contain sodium Benzoate as Preservative. Sodium Benzoate reacts with Ascorbic Acid and Produce Benzene. This Benzene is highly Hepatotoxic and Carcinogenic.

- In Restaurants adulterations are made for more profits for examples led chromate is added in turmeric which leads to severe liver diseases.

➢ **Prakriti:** In this study It is clear that patients having Pitta-kapha dosha in prakruti are more prone to Kamala in future. Kamala is mentioned as Pitta pradhan vyadhi by all Acharyas.

➢ **Sara:** In this study maximum participants that is 57.4% were found with "Avar" Sara. This was because as soon as Kamala Samprapti begins to develop, first there is Rasavaha shrotodushti starts which progressively involved other Dhatu Dhusti. Therefore sara is reduced.

➢ **Ahara shakti:** In this study maximum 48.1% participants had 'Avar' Aharshakti due to Agnimandhata in Kamala patients because yakruit is the adhisthana of agni and in kamalaYakruit function becomes altered.

➢ **Distribution According to SHROTODUSTI PAREEKSHA:** Among the participants, 100.0% exhibited involvement of the "Rasvaha" Shrotas Similarly, the "Raktavaha" shrotas also showed 100.0% involvement. A smaller proportion of participants, specifically 14.8%, had the "Maansavaha" Shrotas affected. According to ayurveda the samprapti of Kamala rog starts with rasvaha shrotodusti later raktavaha and mansavaha shrotas also get involved gradually.

➢ **Chief Complaints:** Among the participants, 79.6% reported "Bhaktadwesh" as their chief complaint. Fatigue, indicated as "Klam," was another prevalent complaint, reported by 88.9% of participants. suggesting a common feeling of tiredness and lack of energy. "Angmard," signifying body ache or discomfort, was reported by 63.0% of participants. Additionally, 57.4% of participants mentioned "Hatendriya," which refers to a decreased sense of taste, smell, or other sensory organs.

➢ **Duration of Chief Complaints:** In this Study Around 13.0% of participants reported experiencing their chief complaints for less than 7 days. A larger proportion, 53.7%, reported a duration of 7 to 15 days. Approximately 22.2% of participants reported a duration of 15 to 30 days. A smaller group of participants, around 11.1%, experienced their chief complaints for over 30 days.

SUBJECTIVE CRITERIA

o **Netra Peetata:** In this study total 96.3% patients were found with symptoms of Netra Peetata. Kamala manifest due to excess aggravation of Pitta and it is characterized by deep yellowish discoloration of eyes.

o **Peet Vidmutrata**: Total 85.2% Patients came with symptoms of Peet Vidmutrata due toexcess vitiation of pitta dosha and it is characterized by yellowish discoloration of stool and Urine.

o **Jwara:** In this Study total 55.6 % patients were found with Jwara. Because Yakrut being a site of Agni, and Agnimandya is an important factor in Samprapti of Jwara.

o **Sadan:** Total 38.9% Patients came with symptoms of Sadan. Preenana (nourishment) and jeevana (vitality) are the karma of Rasa and Raktadhatu respectively. In Kamala, weakness is seen in many patients due to dushti of Rasa and Raktadhatu.

o **Avipaka:** In this Study total 74% patients were found with Symptoms of Avipaka. Mandagni being an important pathological factor in Samprapti of Yakrutvikara, Avipaka is a commonly observed in these patients.

o **Udarshool:** In this study total 50% patients were found with symptoms of Udarshool. Udarashoola is the common symptoms of Yakrutvikara. It is mainly caused due to accumulation of dushtadoshas in Yakrut and udara.

o **Aruchi:** In this study total 77.8% patients were found with symptoms of Aruchi. Aruchi is the lakshana of rasvaha shrotodusti and in Kamala pathogenesis starts withrasvaha shrotodusti.

o **Daha:** Total 48% Patients came with symptoms of Daha. Daha is pitta nanaatmaj vikar and in kamala samprapti starts with aggrevation of pitta Dosha.

❖ **DISCUSSION ON RESULTS**
DISCUSSION ON EFFECT OF LAUHACHURNADI YOGA IN SUBJECTIVEPARAMETERS

❖ **Effect on netra peetata:** Highly significant with p-value<.001.It is due to because Lauhachurnadi Yoga contains Kutaki, Kutaki and haritaki. Kutaki has property of Bhedana which perform Pitta Virechan that's why the Doshas move from shakha to Kostha. Kutaki and Haritaki are Pitta sarak,Shrotoshodhak in action.

❖ **Effect on Peet Vidmutrata**: Lauhachurnadi Yoga is highly significant in Peet Vidmutrata with p-value <.001.we got this result due to Pitta sarak and Mutral action of Amalaki and Shrtoshodhak, Anulomak action of Haritaki and the Bhedan action of Kutaki. That's why Lauhachurnadi Yoga decreases Peetvidmutrata.

❖ **Effect on Jwara**: Lauhachurnadi Yoga contains Kutaki and Amlaki which is tikta rasPradhan, Aam Pachak and Jwaraghna in action.And also Kutaki is Swedajanan in action which perfom Antipyretic action.

❖ **Effect on Sadan**: Highly Significant due to because Lauhachurnadi Yoga contains Amlaki. It has properties of vrisya and Rashayana.and Bibhitaki by its madhur Vipaka has Dhatuvardhak Property. And Lauhabhasma has Haematimic action which increases Rakta dhatu in Body. That's why lauhachurnadi Yoga is highly significant in Decrease Sadan.

❖ **Effect on Avipaka**: Highly significant because Lauhachurnadi Yoga Contains Katuki, Haritaki both have Deepan property. And Kutaki has deepana and Rochan Properties helps in Digestion.

❖ **Effect on Udarshool**: Satisfactory result was obtained because Lauhachurnadi Yoga contains Haritaki and Amalaki Both have Aatanuloman, shoolaghna, Deepan and Paachan Properties.

❖ **Effect on Aruchi:** Amalaki, kutaki, Amlaki Have

Properties Deepan, paachan,Aam Nashana, That's why Lauhachurnadi yoga is highly significance in Aruchi.

❖ **Effect on Daha**: **A** Highly significant result obtained because Lauhachurnadi Yoga contain Haridra abd Kutaki which have property of Dahahar.

DISCUSSION ON EFFECT OF LAUHACHURNADI YOGA IN OBJECTIVEPARAMETERS

✚ **Effect on Hemoglobin (Hb): Highly significant** improvement because of Lauhachurnadi Yoga containing Amalaki and Lauhabhasma. Absorbtion of LauhaBhasma is increased by ascorbic acid which is present in Amalaki.

✚ **Effect on TLC**: Regarding "Total Leukocyte Count (TLC)," the mean change was
556.85 cells/µL. However, the paired t-test produced a t-value of 1.90 and a p-value of 0.063, suggesting **no statistically significant** difference.

✚ **Effect on ESR**: **Significant** improvement was obtained. The reason behind that is lauhachurnadi Yoga increases Haemoglobin Percentage in Body so ESR decreases because these are inversely proportional to each other.

✚ **Effect on Serum Bilirubin (Total)**: **Highly significant** improvement was obtained. Because Lauhachurnadi Yoga containd Kutaki which has Propertiy of Mala Bhedana perform Pitta Virechana.and also Haritaki has properties of Pitta Sharak and shrotoshodhak so these combindly decreases the percentage of total s. bilirubin.

✚ **Effect on Serum Bilirubin (Direct)**: For "Serum Bilirubin Direct," the mean change was 0.25 mg/dL. The paired t-test yielded a t-value of 1.93 and a p-value of 0.060, suggesting **no significant** difference.

✚ **Effect on Serum Bilirubin (Indirect)**: **Statistically significant** improvement was found. Because Lauhachurnadi Yoga contains Kutaki. It helps in restricting the excessive Haemolysis due to its Properties of Rakta and pitta Doshnashakatva and Yakruit-pleehagamitva and elimination of excessive bilirubin through feces with its bhedan karma.

✚ **Effect on ALT And AST: A Significant** improvement was obtained.. Because Lauhachurnadi Yoga have unique combination of Triphla, Kutaki, and Kutaki seems to be increasing Liver Function probably increasing liver enzymes.

✚ **Effect on ALP: No statistically** significant difference was obtained. Because ALP increases in Obstuctive jaundice and in this study the patients of Obstuctive jaundicewere not taken.

✚ DISCUSSION ON OVERAL EFFECT OF LAUHACHURNADI YOGA INKAMALA

The overall assessment of improvement among the participants is as follows: 44.4% of patients experienced marked improvement, 27.8% reported moderate improvement, 18.5% observed mild improvement, and 9.3% did not experience any improvement.

These percentages provide an overview of the varying degrees of progress observed within the studied group, illustrating the range of outcomes from significant improvement with LAUHACHURNADI YOGA in KAMALA. According to Maharshi Charaka the best treatment of kamala is "Mraduvirechana with Tiktta Dravya and Lauhachrnadi Yoga have many Tiktta rasa dravya like Kutaki, haridra, Kutaki along with "Mraduvirechaka" Triphla. That's why Lauhachurnadi Yoga is very effective in Kamala.

Thus the above observations and results shows that The Upshayatmaka Parrikshana of Lauhachurnadi Yoga in Kamala w. s. r. to Jaundice is highly significant in many subjective and Objective Parameters of Kamala.

CONCLUSION

Based on the literature a close perusal of the observation and interference the conclusion drawn from the present study can be presented here, Kamala is characterised by the yellowish discoloration of sclera, skin, nails, urine and stool.

It is a disease in which Pitta Dosha effect over Rakta and mamsadhatu. It leads to Kamala.

It is depending upon the dispersal of Pitta in the body. Kostashakhashrita Kamala is manifested as a sequel Pandu and shakhastrita Kamala Vata and Kapha Dosha and dushya Rasa, Rakta, which obstructs thepassage of Pitta varga.

The Laughachurnadi Yoga it repair the Agni vikruti and restore the normally of Agnivyapar. The probable mode of action of Laughachurnadi Yoga acts as a deepana, panchana, Yakruit Uttejaka, pitta saraka pitta rechaka and that' why Pitta prasamana along with Kapha hara quality.

❖ The statistical evaluation of Demographic data shows that Maximum patients were middle age group with Mandagni and Belonged to poor societies.

The statistical evaluation of etiological factors shows that maximum patients were taken ati katu, amla, lavar, kshar Aahar- Vihaar and had short Temparament.

❖ Some possible Nidan of Kamala Rog like Packed Food, Ready to Eat Food, Cold drink Tea, Coffee etc were found.

❖ The statistical evaluation of Dashvidha pareeksha shows maximum patients were found with Pitta-Kapha and Vaat-Pittaj Shareerik and Rajashika Manashik Prakriti. The "Saar", and AaharShakti were "Avar". Rest of Dashvidh pareeksha was "Madhyama" Categaries.

❖ The statistical evaluation of Chief complaints shows that maximum Patients were come with chief Complaints of Bhaktadwesha, Klam, Angamard, Hatendriya, etc.

❖ The statistical evaluation of Laughachurnadi Yoga

in Kamala has shown highly significance in both the parameters that is Subjective as well as Objective Parameters. Subjective criteriasSuch as Haridra netra, Haridra Vidmootrata,, Avipaka, Aruchi, Udarshool, Jwara, Sadan, Daha and Objective criterias such as Haemoglobin, ESR, Total Bilirubin, Indirect Bilirubin, has shown highly significance with the P-Value as <0.001.

❖ SGPT and SGOT has shown P-value as <0.05, which is significant.

❖ Only Alkaline Phosphates and Direct Serum Bilirubin has not significant with the P-value as > 0.05.

➢ The overall assessment of improvement among the participants is as follows: 44.4% of individuals experienced marked improvement, 27.8% reported moderate improvement, 18.5% observed mild improvement, and 9.3% did not experience any improvement. These percentages provide an overview of the varying degrees of progress observed within the studied group, illustrating the range of outcomes from significant improvement to no noticeable change.

REFERENCES

1. Charaka Samhita, Part II. Satya Narayana Shastri, editor, 1st ed. Varanasi: Chaukhambha Bharti Academy; 2019. Pandurogachikitsa, 16/34. .

2. Sushruta Samhita (Uttar Tantra), Ambika Dutt Shastri editor. 2nd ed., Varanasi: Chaukambha Orientalia;. Pandu RogaPratisedha, 44/4-5. p.729.

3. Ashtanga Hridaya. Ashtavaidyan Vaidyamadhom Cheriya, editor. 1st ed. Varanasi: Chaukambha Krishnadas Academy; 2007. NidanSthana, Pandwadinirnayaya Adayaya,13/15-19. p.274-75.

4. Ram Harsh Singh, editor. Kayachikitsha, Part II. 1st ed. Varanasi: Chaukambha Sanskrit Pratishthan.

5. Madhav nidanam. Yadunandan Upadhayaya, editor. 1st ed. Varanasi: Chaukhambha Bharti Academy. Panduroga- kamala-kumbhkamaladiNidana, 8/19-20. p.262.

6. Kayachikitsa volume (2) by Prof.Ajay Kumar Sharma, Chaukhambha orientaliap rakashan Delhi.

7. Dravyaguna Vigyan volume (2) by Acharya P.V.Sharma Chaukhambha subharti prakashan, Varanasi.

8. Harshmohan text book of pathology, by J.P.brothers medical publisher Ltd.

9. Davidson's Principles of Internal Medicine, Mc Graw-Hill companies.

10. Yogaratnaker (Pandurogachikitsa)

11. Ayurveda vikriti Vigyan and Rog vigyan -Dr. P.S. Byadgi.

12. Robbins and Cotran basis of Pathologic disease.