ISSN 2456-3110
Vol 5 · Issue 6
Nov-Dec 2020

Journal of Ayurveda and Integrated Medical Sciences

www.jaims.in

JAIMS

An International Journal for Researches in Ayurveda and Allied Sciences

Charaka Publications

Indexed

Journal of
Ayurveda and Integrated Medical Sciences
ISSN 2456-3110
ORIGINAL ARTICLE Nov-Dec 2020

A comparative clinical study to evaluate the efficacy of *Swarasa* and *Kashaya* of *Nimba, Amrita, Bhumyamalaki, Bhringaraja & Katuki* (NABBK) in the management of *Kostashakhashrita Kamala* vis-à-vis Viral Hepatitis

Dr. Shivappa A. Gangal[1], Dr. Deepa S. Gangal[2]

[1]Reader, Department of Shalya Tantra, Shri Veerpulikeshi Rural Ayurvedic Medical College Hospital & Research Center, Badami, [2]Lecturer, Department of Kayachikitsa, Shri Kalidas Ayurvedic Medical College and Hospital & Research Center, Badami, Karnataka, INDIA.

ABSTRACT

Kamala is a one among the *Rakta Pradoshaja Vikara*, where there is aversion towards all desires. Two types of *Kamala* are mentioned in Ayurvedic classics viz *Kostashakhashrita Kamala* and *Shakhashrita Kamala*. *Kostashakhashrita Kamala* in its definition includes the condition which is mentioned as viral hepatitis in western system of medicine. The treatment modalities described in *Ayurveda* for *Kostashakhashrita Kamala* include both *Shodhana* and *Shamana*. This study is an attempt to evaluate the efficacy of *Nimba, Amrita, Bhumyamalaki, Bhringaraja* and *Katuki* (NABBK) *Kashaya* and compare its efficacy with that of *Nimba, Amrita, Bhumyamalaki, Bhringaraja* (NABB) *Swarasa* with *Katuki Churna* in *Kostashakhashrita Kamala* vis-à-vis Viral Hepatitis. Overall difference between two groups showed statistically non-significant result with 'p' value 0.953.

Key words: *Kostashakhashrita Kamala, Viral Hepatitis, NABB Swarasa, NABBK Kashaya, Katuki Churna.*

INTRODUCTION

Kamala is a *Pitta Pradhana*[1] and *Rakta Pradoshaja Vikara.*[2] Two types of *Kamala* are mentioned in Ayurvedic classics viz - *Kostashakhashrita Kamala* and *Shakhashrita Kamala.*[3] *Kostashakasrita Kamala* is characterized by *Peeta Netra*, *Mootra*, *Twak*, *Nakha*, *Varchas Bekha Varna* and *Hatha Indrya.*[4] *Kostashakhashrita Kamala* can be correlated to Hepato cellular jaundice of western system of medicine. Among different varieties of Hepato cellular jaundice Viral Hepatitis is the most common one. The term Viral Hepatitis refers to infection of the liver caused by five well characterised hepatotropic viruses, they are hepatitis A, B, C, D & E.[5]

Prevalence of Viral Hepatitis is 1.08% to 2.72% globally, the frequency being similar in males and females.[6] The treatment modalities described in *Ayurveda* for *Kostashakhashrita Kamala* include both *Shodhana* and *Shamana*. Among different varieties of *Shamanoushadhis* the formulations which possess *Pitta Rechana, Raktashodhana, Yakrit Uttejaka, Daha Prashanmana, Jwaraghna, Rasayana* and *Balya* properties herbs are specifically required.

Address for correspondence:
Dr. Shivappa A. Gangal
Reader, Department of Shalya Tantra, Shri Veerpulikeshi Rural Ayurvedic Medical College Hospital & Research Center, Badami, Karnataka, INDIA..
E-mail: dr.deepa.v.hallikeri11@gmail.com

Submission Date: 19/11/2020 Accepted Date: 23/12/2020

Access this article online

Quick Response Code

Website: www.jaims.in

DOI: 10.21760/jaims.5.6.2

MATERIALS AND METHODS

Source of data

Subjects of *Kostashakhashrita Kamala* vis-à-vis Viral Hepatitis were selected from the OPD and IPD of

ISSN: 2456-3110 ORIGINAL ARTICLE Nov-Dec 2020

Government Ayurveda Medical College & Hospital, Mysuru.

Diagnostic criteria

Diagnosis of the cases was made in the present study according to the changes in the biochemical values of liver function test (LFT), signs and symptoms of *Kostashakhashrita Kamala* were as follows;

Changes in the biochemical values of LFT

- Increased Total bilirubin with direct Bilirubin relatively more than Indirect bilirubin.
- Increased SGOT and SGPT level with SGPT relatively more than SGOT.
- Increased Alkaline phosphatase exceeding twice the upper limit of normal.

Signs and symptoms of *Kostashakhashrita Kamala* vis-à-vis Viral Hepatitis

1. *Peeta Netra* (Icterus)
2. *Peeta Twak* (Yellowish discolouration of skin)
3. *Peeta Varchas* (Yellowish discolouration of stool)
4. *Peeta Mutra* (Yellowish discolouration of urine)

Inclusion criteria

- Subjects with signs & symptoms of *Kostashakhashrita Kamala* vis-à-vis Viral Hepatitis such as *Peeta Netra*, *Mutra Twak, Peeta Varchas, Dourbalya, Aruchi* and impaired values of LFT were included in the study. Subjects of all gender were included in the study.
- Subjects between the age Group of 16-70 years were selected in the study.
- Both fresh and treated cases were included in the study.

Exclusion criteria

- Pregnant and lactating women were excluded from the study.
- Subjects of Liver cirrhosis, Obstructive jaundice, Hemolytic jaundice, Alcoholic liver disease and Drug induced hepatitis were excluded from the study.
- Hepatitis associated with other Systemic disease such as –Uncontrolled Diabetes Mellitus, Hepatorenal Syndome, Hepatic Encephalopathy, Fulminant Hepatitis (Massive hepatic necrosis), Respiratory Failure and Cardiovascular Failure were excluded from the study.

Intervention

The interventions were as follows:

In Group A – The *Swarasa* of *Nimba*, *Amrita*, *Bhumyamalaki*, *Bhringaraja* (NABB) each in equal quantity consisting 48ml as the total dosage in two equally divided dosage once in the morning and once the evening, before food with *Madhu* was administered as *Anupana* for 15 consecutive days.

Katuki Churna in the dose of 6gms in a two equally divided dosage was administered along with *Swarasa*.

In Group B – The *Kashaya* of *Nimba*, *Amrita, Bhumyamalaki, Bhringaraja* and *Katuki* (NABBK) each one part consisting 96ml as the total dosage in two equally divided dosage once in the morning and once in the evening, before food with *Ushna jala* was administered as *Anupana* for 15 consecutive days.

Assessment Criteria

Assessment parameters included the clinical grading of signs and symptoms of the disease *Kostashakhashrita Kamala* / Viral Hepatitis.

Assessment was done based on following parameters.

Biochemical Parameters

Liver Function Test

Total Bilirubin, Direct bilirubin, SGOT, SGPT, Alkaline phosphatase.

Clinical Parameters

Peeta Netra (Icterus), *Peeta Twak* (Yellowish discolouration of skin), *Peeta Varchas* (Yellowish discolouration of stool), *Peeta Mutra* (Yellowish discolouration of urine), *Dourbalya* (Fatigue), *Aruchi*

ISSN: 2456-3110 ORIGINAL ARTICLE Nov-Dec 2020

(Anorexia), *Chardi* (Nausea & Vomiting), *Jwara* (Fever).

Rating and Scoring for Assessment (signs & symptoms)

Peeta Netra (PN)

PN0 – Absent

PN1 – Mild

PN2 – Moderate

PT3 – Severe

Peeta Twak (PT)

PT0 – Absent

PT1 – Mild

PT2 – Moderate

PT3 – Severe

Peeta Varchas (PV)

PV0 – Absent

PV1 – Mild

PV2 – Moderate

PV3 – Severe

Peeta Mutra (PM)

PM0 - Absent

PM1 - Mild

PM2 - Moderate

PM3 – Severe

Dourbalya (D)

D0 – Absent

D1 – Mild

D2 – Moderate

D3 – Severe

Aruchi (A)

A0- Absent

A1– Present

Chardi (C)

C0 – Absent

C1 – Present

Jwara (J)

J0 – Absent

J1 – Present

Assessment Schedule

In this clinical trial, total three assessments of the subjects were made.

1. Pre test assessment was done on the day of intervention i.e., 0 day – Assessment was done with respect to Signs and Symptoms and LFT.
2. Mid test assessment was done on 8th day of intervention - Assessment was done with respect to Signs and Symptoms.
3. Post test assessment was done on 15th day of intervention - Assessment was done with respect to Signs and Symptoms and LFT

Overall Assessment

The assessment was Graded (G) with following manner:

- G1 - Marked improvement: Reduction in all the signs and symptoms except any one sign or symptom in subjects. Marked changes in the LFT value.
- G2 - Moderate improvement: Reduction in all the signs and symptoms except any two signs or symptoms in subjects. Moderate changes in the LFT value.
- G3 - Mild improvement: Reduction in any two sign or symptom in subjects. Mild changes in the LFT value.
- G4 - Insignificant improvement: No Reduction in any signs and symptoms in subjects. No changes in the LFT value.

Statistical Methods

The data was collected before intervention i.e., on 0 day, during the intervention i.e., on 8th day and

ISSN: 2456-3110 **ORIGINAL ARTICLE** Nov-Dec 2020

after the completion of intervention period i.e., on 15th day. The result was analyzed statistically by using Descriptive statistics, Repeated measures ANOVA and Contingency co-efficient test analysis using Service product for statistical solution (SPSS) for windows software.

OBSERVATION AND RESULTS

General observations

In the present study among 46 subjects who completed the clinical trial maximum number of subjects belonged to the age group of 21 – 30 (41.3%) years, Majority were driver and labour 9(19.6 % each). Majority of subjects belonged to male gender 40 (87.0%), belonged to Hindu religion 40 (87.0%), belonged to Higher Secondary education 14 (26.1%). 28 (60.9%) subjects were married. Majority of subjects belonged to upper middle class family 18 (39.1%), 35 (76.1%) subjects approached the hospital for the first time to take treatment and 11 (23.9%) had already taken different forms of treatment of varying duration. Majority of subjects belonged to mixed food habits 37 (80.4%), 24 (52.2%) were of *Pitta Kapha Prakruti* and 24 (52.2%) belonged to urban locality.

Results

In the present comparative clinical study both the groups showed statistically highly significant result in the following components i.e., *Peeta Netra* with p value 0.000, *Peeta Mutra* with p value 0.000, *Dourbalya* with p value 0.000, *Aruchi* with p value 0.000, *Chardi* with p value 0.000 and *Jwara* with p-value 0.000. *Peeta Twak* showed non-significant result in both the groups, *Peeta Varchas* showed highly significant result in group A with p value 0.000 and non-significant result in group B with p value 0.172. And both the groups showed highly significant result in reduction of total bilirubin with p value 0.000, direct bilirubin with p value 0.000, SGPT with p value 0.000 and alkaline phosphatase with p value 0.000, reduction in SGOT with p value 0.000 in Group A, p value 0.002 in Group B. The result of Overall difference in between two groups showed statistically non - significant result with p value 0.953.

Table 1: Showing result on *Peeta Netra*.

Groups	Day	Absent	Mild	Moderate	Severe	Total
Group A	0 day	0(0.0%)	0(0.0%)	20(87.0%)	3(13.0%)	23(100.0%)
	8th day	0(0.0%)	9(39.1%)	14(60.9%)	0(0.0%)	23(100.0%)
	15th day	5(21.7%)	18(78.3%)	0(0.0%)	0(0.0%)	23(100.0%)
	Total	5(7.2%)	27(39.1%)	34(49.3%)	3(4.3%)	69(100.0%)
Group B	0 day	0(0.0%)	2(8.7%)	19(82.6%)	2(8.7%)	23(100.0%)
	8th day	0(0.0%)	11(47.8%)	11(47.8%)	1(4.3%)	23(100.0%)
	15th day	9(39.1%)	12(52.2%)	2(8.7%)	0(0.0%)	23(100.0%)
	Total	9(13.0%)	25(36.2%)	32(46.4%)	3(4.3%)	69(100.0%)

Symmetric Measures				
Groups			Value	Approximate Significance (A.S)
Group A	Nominal by Nominal	Contingency Coefficient(C.C)	0.617	0.000
	N of Valid Cases		69	
Group B	Nominal by Nominal	C.C	0.544	0.000
	N of Valid Cases		69	

Table 2: Showing result on *Peeta Mutra*.

Groups	Day	Absent	Mild	Moderate	Severe	Total
Group A	0 day	0(0.0%)	0(0.0%)	20(87.0%)	3(13.0%)	23(100.0%)
	8th	1(4.3%)	18(78.3	4(17.4	0(0.0%	23(100.

ISSN: 2456-3110 ORIGINAL ARTICLE Nov-Dec 2020

	day		%)	%)	)	0%)
	15th day	12(52.2 %)	11(47.8 %)	0(0.0%)	0(0.0%)	23(100. 0%)
	Tot al	13(18.8 %)	29(42.0 %)	24(34.8 %)	3(4.3%)	69(100. 0%)
Grou p B	0 day	0(0.0%)	0(0.0%)	21(91.3 %)	2(8.7%)	23(100. 0%)
	8th day	0(0.0%)	21(91.3 %)	2(8.7%)	0(0.0%)	23(100. 0%)
	15th day	17(73.9 %)	6(26.1 %)	0(0.0%)	0(0.0%)	23(100. 0%)
	Tot al	17(24.6 %)	27(39.1 %)	23(33.3 %)	2(2.9%)	69(100. 0%)

Tests of Within-Subjects Effects

Symmetric Measures				
Groups			**Value**	**A.S**
Group A	Nominal by Nominal	C.C	0.720	0.000
	N of Valid Cases		69	
Group B	Nominal by Nominal	C.C	0.847	0.000
	N of Valid Cases		69	

Table 3: Showing result on *Peeta Twak.*

Group s	**Day**	**Absent**	**Mild**	**Moderate**	**Total**
Group A	0 day	18(78.3%)	4(17.4%)	1(4.3%)	23(100.0 %)
	8th day	22(95.7%)	1(4.3%)	0(0.0%)	23(100.0 %)
	15th day	23(100.0%)	0(0.0%)	0(0.0%)	23(100.0 %)
	Tota l	63(91.3%)	5(7.2%)	1(1.4%)	69(100.0 %)
Group B	0 day	20(87.0%)	2(8.7%)	1(4.3%)	23(100.0 %)
	8th day	21(91.3%)	2(8.7%)	0(0.0%)	23(100.0 %)
	15th day	22(95.7%)	1(4.3%)	0(0.0%)	23(100.0 %)
	Tota l	63(91.3%)	5(7.2%)	1(1.4%)	69(100.0 %)

Tests of Within-Subjects Effects

Symmetric Measures				
Groups			**Value**	**A.S**
Group A	Nominal by Nominal	C.C	0.239	0.097
	N of Valid Cases		69	
Group B	Nominal by Nominal	C.C	0.134	0.645
	N of Valid Cases		69	

Table 4: Showing result on *Peeta Varchas.*

Group s	**Day**	**Absent**	**Mild**	**Moderat e**	**Total**
Group A	0 day	11(47.8%)	11(47.8%)	1(4.3%)	23(100.0 %)
	8th day	21(91.3%)	2(8.7%)	0(0.0%)	23(100.0 %)
	15th day	23(100.0 %)	0(0.0%)	0(0.0%)	23(100.0 %)
	Tota l	55(79.7%)	13(18.8%)	1(1.4%)	69(100.0 %)
Group B	0 day	17(73.9%)	4(17.4%)	2(8.7%)	23(100.0 %)
	8th day	20(87.0%)	3(13.0%)	0(0.0%)	23(100.0 %)
	15th day	22(95.7%)	1(4.3%)	0(0.0%)	23(100.0 %)
	Tota l	59(85.5%)	8(11.6%)	2(2.9%)	69(100.0 %)

ISSN: 2456-3110 ORIGINAL ARTICLE Nov-Dec 2020

Tests of Within-Subjects Effects

Symmetric Measures				
Groups			**Value**	**A.S**
Group A	Nominal by Nominal	C.C	0.402	0.000
	N of Valid Cases		69	
Group B	Nominal by Nominal	C.C	0.215	0.172
	N of Valid Cases		69	

Table 5: Showing result on *Dourbalya*.

Groups	Day	Absent	Mild	Moderate	Severe	Total
Group A	0 day	0(0.0%)	3(13.0%)	18(78.3%)	2(8.7%)	23(100.0%)
	8th day	11(47.8%)	12(52.2%)	0(0.0%)	0(0.0%)	23(100.0%)
	15th day	23(100.0%)	0(0.0%)	0(0.0%)	0(0.0%)	23(100.0%)
	Total	34(49.3%)	15(21.7%)	18(26.1%)	2(2.9%)	69(100.0%)
Group B	0 day	0(0.0%)	1(4.3%)	21(91.3%)	1(4.3%)	23(100.0%)
	8th day	11(47.8%)	12(52.2%)	0(0.0%)	0(0.0%)	23(100.0%)
	15th day	23(100.0%)	0(0.0%)	0(0.0%)	0(0.0%)	23(100.0%)
	Total	34(49.3%)	13(18.8%)	21(30.4%)	1(1.4%)	69(100.0%)

Tests of Within-Subjects Effects

Symmetric Measures				
Groups			**Value**	**A.S.**
Group A	Nominal by Nominal	C.C	0.756	0.000
	N of Valid Cases		69	
Group B	Nominal by Nominal	C.C	0.798	0.000
	N of Valid Cases		69	

Table 6: Showing result on *Aruchi*.

Groups	Day	Absent	Present	Total
Group A	0 day	1(4.3%)	22(95.7%)	23(100.0%)
	8th day	22(95.7%)	1(4.3%)	23(100.0%)
	15th day	23(100.0%)	0(0.0%)	23(100.0%)
	Total	46(66.7%)	23(33.3%)	69(100.0%)
Group B	0 day	3(13.0%)	20(87.0%)	23(100.0%)
	8th day	23(100.0%)	0(0.0%)	23(100.0%)
	15th day	23(100.0%)	0(0.0%)	23(100.0%)
	Total	49(71.0%)	20(29.0%)	69(100.0%)

Tests of Within-Subjects Effects

Symmetric Measures				
Groups			**Value**	**A.S**
Group A	Nominal by Nominal	C.C	0.936	0.000
	N of Valid Cases		69	
Group B	Nominal by Nominal	C.C	0.904	0.000
	N of Valid Cases		69	

Table 7: Showing result on *Chardi*.

Groups	Day	Absent	Present	Total
Group A	0 day	11(47.8%)	12(52.2%)	23(100.0%)
	8th day	23(100.0%)	0(0.0%)	23(100.0%)
	15th day	23(100.0%)	0(0.0%)	23(100.0%)
	Total	57(82.6%)	12(17.4%)	69(100.0%)
Group B	0 day	8(34.8%)	15(65.2%)	23(100.0%)

ISSN: 2456-3110 **ORIGINAL ARTICLE** Nov-Dec 2020

	8th day	23(100.0%)	0(0.0%)	23(100.0%)
	15th day	23(100.0%)	0(0.0%)	23(100.0%)
	Total	54(78.3%)	15(21.7%)	69(100.0%)

Tests of Within-Subjects Effects

Symmetric Measures				
Groups			**Value**	**A.S**
Group A	Nominal by Nominal	C.C	0.649	0.000
	N of Valid Cases		69	
Group B	Nominal by Nominal	C.C	0.745	0.000
	N of Valid Cases		69	

Table 8: Showing result on *Jwara*.

Groups	Day	Absent	Present	Total
Group A	0 day	12(52.2%)	11(47.8%)	23(100.0%)
	8th day	23(100.0%)	0(0.0%)	23(100.0%)
	15th day	23(100.0%)	0(0.0%)	23(100.0%)
	Total	58(84.1%)	11(15.9%)	69(100.0%)
Group B	0 day	12(52.2%)	11(47.8%)	23(100.0%)
	8th day	23(100.0%)	0(0.0%)	23(100.0%)
	15th day	23(100.0%)	0(0.0%)	23(100.0%)
	Total	58(84.1%)	11(15.9%)	69(100.0%)

Tests of Within-Subjects Effects

Symmetric Measures				
Groups			**Value**	**A.S**
Group A	Nominal by Nominal	C.C	0.616	0.000
	N of Valid Cases		69	
Group B	Nominal by Nominal	C.C	0.616	0.000
	N of Valid Cases		69	

Biochemical Parameters

Table 9: Showing result on Total Bilirubin.

Descriptive Statistics				
	Group	**Mean**	**Std. Deviation**	**N**
Pre Test	Group A	10.8722	4.59118	23
	Group B	9.7696	5.97681	23
	Total	10.3209	5.29907	46
Post Test	Group A	3.0783	1.17394	23
	Group B	3.3696	4.72724	23
	Total	3.2239	3.40889	46

Tests of Within-Subjects Effects

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Change	1158.436	1	1158.436	146.779	.000
change * Group	11.172	1	11.172	1.416	.241

Table 9: Showing result on Direct Bilirubin.

Descriptive Statistics				
	Group	**Mean**	**Std. Deviation**	**N**
Pre test	Group A	5.4000	2.70421	23
	Group B	4.7391	2.87714	23
	Total	5.0696	2.78096	46
Post test	Group A	1.5739	.76587	23
	Group B	1.5130	1.56185	23

ISSN: 2456-3110 **ORIGINAL ARTICLE** Nov-Dec 2020

	Total	1.5435	1.21667	46

Tests of Within-Subjects Effects

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Change	285.966	1	285.966	125.568	.000
change * Group	2.070	1	2.070	.909	.346

Table 10: Showing result on SGOT

Descriptive Statistics				
	Groups	**Mean**	**Std. Deviation**	**N**
Pre test	Group A	206.2391	162.32920	23
	Group B	309.2391	359.55641	23
	Total	257.7391	280.70935	46
Post test	Group A	55.3609	19.36986	23
	Group B	54.6783	31.84105	23
	Total	55.0196	26.06161	46

Tests of Within-Subjects Effects

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Change	945190.109	1	945190.109	27.060	.000
change * Group	61812.979	1	61812.979	1.770	.190

Table 11: Showing result on SGPT.

Descriptive Statistics				
	Group	**Mean**	**Std. Deviation**	**N**
Pre test	Group A	344.8174	256.02035	23
	Group B	355.3087	358.01081	23
	Total	350.0630	307.79016	46
Post test	Group A	72.5043	21.58576	23
	Group B	71.2522	44.26792	23
	Total	71.8783	34.44193	46

Tests of Within-Subjects Effects

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Change	1779895.785	1	1779895.785	43.152	0.000
change * Group	792.978	1	792.978	0.019	0.890

Table 12: Showing result on *Alkaline Phosphatase.*

Descriptive Statistics				
	Groups	**Mean**	**Std. Deviation**	**N**
Pre test	Group A	319.3217	184.98424	23
	Group B	336.0217	96.75050	23
	Total	327.6717	146.20864	46
Post test	Group A	185.9043	77.99645	23
	Group B	174.5391	57.11177	23
	Total	180.2217	67.83638	46

Tests of Within-Subjects Effects

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Change	500054.557	1	500054.557	75.475	0.000
change * Group	4529.024	1	4529.024	0.684	0.413

ISSN: 2456-3110 ORIGINAL ARTICLE Nov-Dec 2020

Table 13: Showing the result on Overall Assessment.

Overall Assessment	Group A	Group B	Total
Marked improvement	13(56.5%)	14(60.9%)	27(58.7%)
Moderate improvement	9(39.1%)	8(34.8%)	17(37.0%)
Mild improvement	1(4.3%)	1(4.3%)	2(4.3%)
Insignificant improvement	0(0.00%)	0(0.00%)	0(0.00%)
Total	23(100.0%)	23(100.0%)	46(100.0%)

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Cramer's V	0.046	0.953

DISCUSSION

The overall result in Group A, maximum number of subjects i.e., 13(56.5%) had marked improvement, 9(39.1%) had moderate improvement, 1 subject (4.3%) had mild improvement. In Group B, maximum number of subjects i.e., 14 (60.9%) had marked improvement, 8 (34.8%) had moderate improvement and 1 subject (4.3%) had mild improvement. The result in between the two groups showed statistically non-significant result with p value 0.953. It showed that both the Groups have similar role to play in the management of *Kostashakhashrita Kamala* vis-à-vis Viral Hepatitis.

The formulations selected for the study and probable mode of action were discussed as follows;

All the drugs which are used in the formulations have some similar qualities with respect to their *Rasa, Guna, Veerya* and *Vipaka*. All have *Katu* and *Tikta Rasa* and *Katu Vipaka* in common, with respect to *Guna Ruksha* and *Laghu* are common in all the five ingredients of the formulations. *Tikta Rasa* is mainly having *Arochakaghna, Deepana, Pachana, Jwaraghna* properties. *Laghu* and *Ruksha Guna* does the *Upashoshana* of *Pitta. Tikta Rasa* facilitates the normal function of *Yakrit*. *Katuki* is having *Pitta Rechana* property by the virtue of *Sara Guna.* Which is essential for *Samprapti Vighatana* of *Kostashakhashrita Kamala.*

All the drugs which are used in the formulations have a property which seems to have significant role in reducing *Pitta*. These drugs have *Pitta Rechana, Raktashodhana, Yakrit Uttejaka, Kandughna, Daha Prashanmana, Jwaraghna, Rasayana* and *Balya* properties. *Amrita* is having *Kamalahara* (*Vyadhighna*) property. Remaining four with respect to their *Kamalahara* properties have been substantiated by the recent researches such as the antiviral, hepatoprotecive, anti-inflammatory, antibacterial, heptic cell regenerator.

Discussion on two different forms of formulations used in intervention

The combined effect of *Nimba*, *Amrita, Bhumyamalaki* and *Bhrnigaraja* (NABB) *Swarasa* with *Katuki Churna* has been established. Even though these drugs are found effective in the management of Viral Hepatitis, the form of drug possess some practical problems i.e., to provide fresh *Swarasa* throughout the year is practical difficult because of non-availability of one or other ingredient throughout the year. Proper preservation and storage is also difficult. Lastly the administration of these in the form of *Swarasa* may not suit all the subjects, especially those who are in the *Amavastha* of the disease.

Among the *Panchavidha Kashaya Kalpana, Kashaya* is *Laghu* in nature so it is easily digestible and palatable. It is also noted that these raw drugs are available in almost all seasons, the method of preparation of *Kashaya* is very easy. Considering the above factors these effective drugs are presented in the form which can be stored and preserved for longer duration.

ISSN: 2456-3110 **ORIGINAL ARTICLE** Nov-Dec 2020

Hence comparative study of NABB *Swarasa + Katuki Churna* and NABBK *Kashaya* was selected.

CONCLUSION

Kamala is a *Rakta Pradoshaja Vikara.* In which hunger and appetite for food are diminished, simple meaning of *Kamala* is a disease where there is little or no desire for food according to Harana Chandra. *Bahu Pitta Kamala* is synonymous of *Kostashkhastrita Kamala* and *Alpa Pitta Kamala* is synonymous of *Shakhashrita Kamala. Kostashakhashrita Kamala* is *Pitta Dosha* predominant disease. The *Dosha* such as *Ranjaka Pitta, Pachaka Pitta, Vyana Vata* and *Kledaka Kapha, Dushyas* such as *Rasa* and *Rakta*, *Srotas* such as *Pittavaha, Rasavaha* and *Raktavaha* plays an important role in the pathogenesis of *Kostashakhashrita Kamala.* The study was conducted on 46 patients with 23 patients in each Group. In the study it was observed that both the Groups have similar role to play in the management of *Kostashakhashrita Kamala* vis-à-vis Viral Hepatitis. So it can be concluded that *Swarasa* is potent than *Kashaya*, but the form of drug possess some practical problems i.e. to provide fresh *Swarasa* throughout the year is practical difficulty because of non-availability of *Bhringaraja* and *Bhumyamalaki* throughout the year. Proper preservation and storage is also difficult. The administration of these in the form of *Swarasa* in the *Amavastha* of the disease is difficult. The earlier research had been established the efficacy of NABB *Swarasa*, the present study was taken to evaluate the efficacy of NABBK *Kashaya* based on the convenience of administration. Considering the above factors it can be concluded that it will be beneficial if these drugs are presented in the form which can be stored and preserved for longer duration. Hence NABBK *Kashaya* can be can be used as an alternative to NABB *Swarasa* with *Katuki Churna* with almost the same efficacy. The shelf life of *Dravyas* can be extended in the form of NABB *Kashaya*.

REFERENCES

1. Agnivesha-Charaka Samhita, Ayurveda Dipika commentary by Chakrapanidatta, (Ed) Vaidya Jadavji Trikamji Acharya, Chaukamba Sanskrit Sansthan, Varanasi, Fourth edition. Chikitsa sthana 16/34, Pg-399
2. Agnivesha-Charaka Samhita, Ayurveda Dipika commentary by Chakrapanidatta, (Ed) Vaidya Jadavji Trikamji Acharya, Chaukamba Sanskrit Sansthan, Varanasi, Fourth edition. Sutra sthana 28/11-12, pg-571
3. Agnivesha-Charaka Samhita, Ayurveda Dipika commentary by Chakrapanidatta, (Ed) Vaidya Jadavji Trikamji Acharya, Chaukamba Sanskrit Sansthan, Varanasi, Fourth edition. Chikitsa sthana 16/36, pg-400
4. Agnivesha-Charaka Samhita, Ayurveda Dipika commentary by Chakrapanidatta, (Ed) Vaidya Jadavji Trikamji Acharya, Chaukamba Sanskrit Sansthan, Varanasi, Fourth edition. Chikitsa sthana 16/36, pg-400
5. C.R.W.Edwards, E.R.Chilvers, Davidson"s Principles and Practice of Medicine, edited by Nicki.R.Colledge, Brian.R.Walker, Churchill Living stone. Elsevier, London, 22nd edition, 2014; page no-962-968
6. http://www.ncbi.nlm.nih.gov/pmc/articles and http://nmji.in/archives

How to cite this article: Dr. Shivappa A. Gangal, Dr. Deepa S. Gangal. A comparative clinical study to evaluate the efficacy of Swarasa and Kashaya of Nimba, Amrita, Bhumyamalaki, Bhringaraja & Katuki (NABBK) in the management of Kostashakhashrita Kamala vis-à-vis Viral Hepatitis. J Ayurveda Integr Med Sci 2020;6:10-19.
http://dx.doi.org/10.21760/jaims.5.6.2

Source of Support: Nil, **Conflict of Interest:** None declared.

****