

A COMPARATIVE CLINICAL STUDY OF 'KAMALAHAR YOG & VASAADI KWATHA' IN THE MANAGEMENT OF BAHUPITTA KAMALA WITH SPECIAL REFERENCE TO HYPERBILIRUBINAEMIA

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ABSTRACT

Yellowish discoloration of conjunctiva, skin, urine and stool signals the onset of a deadly disease called *Kamala* (Jaundice). The incidence of *kamala* is very common in society due to life style, food habits & sanitation etc. So we get detailed description of “*Bahupitta Kamala*”, which is type of *Kamala* and it can be correlated with “Hyperbilirubinemia”. Hyperbilirubinemia is a common liver disorder. It is found in all socioeconomical classes of the society. The liver disorders have remained a challenge to medical profession. Since many of them ultimately lead to irreversible changes. Hyperbilirubinemia is a condition where there is yellow appearance of skin, sclera & mucous membrane resulting from an increase bilirubin concentration in the body fluids, mostly explained as jaundice which resemble the sign “*Haridratwakanakhannana, Haridra-netra-mutra*” explained in the *kamala* in *Charak chikitsa sthana*. (16/35&126). In fact, in modern medicine, number of problems are still remained, especially in the treatment of liver diseases. Till today there is no satisfactory medicine in allopathy. Naturally inadequacies in available medicines give view towards the *Ayurveda*. *Acharya Charaka* has suggested treatment for the *Bahupitta Kamala* in *Charak chikitsa sthana*. 60 patients were selected and divided in two groups. Group A (*KAMALAHAR YOG*), Group B (*VASAADI KWATHA*). Treatment was given for 21 days, the result found are quite satisfactory.

Keywords: *Bahupittakamala, Kamalahar Yog, Vasaadi Kwatha*

INTRODUCTION

‘*Ayurveda*’ is a science of life. It is indefinably valuable gift given to mankind by ‘Lord *Bramha*’ and our ancient *Acharya*’s. *Ayurveda* not only treat disease but also gives emphasis on preventive aspect of disease. So it is called science of ‘Life and Longevity’.

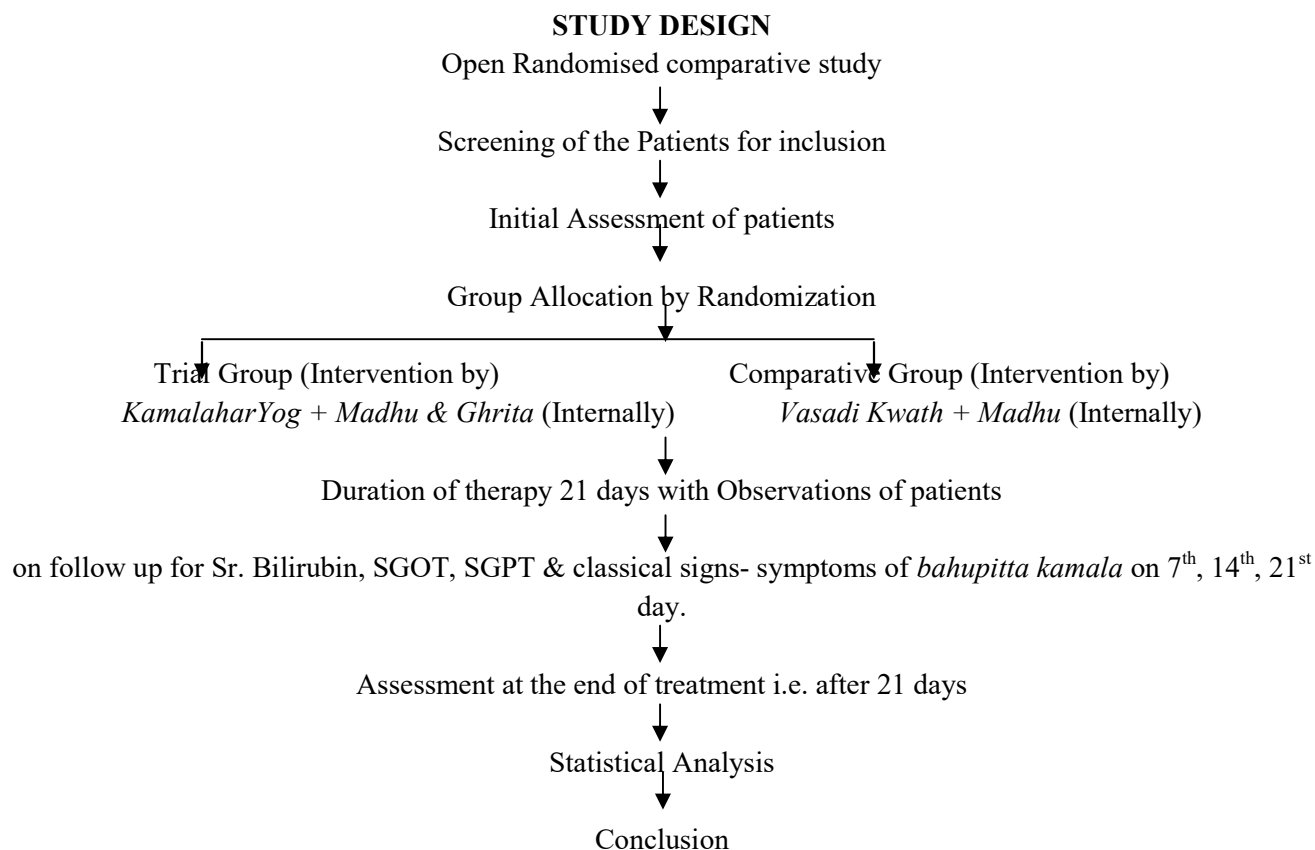
Yellowish discoloration of conjunctiva, skin, urine and stool signals the onset of a deadly disease called *Kamala* (Jaundice). The incidence of *kamala* is very common in society due to life style, food habits & sanitation etc. So we get detailed description of

“Bahupitta Kamala”, which is type of Kamala and it can be correlated with “Hyperbilirubinemia”. Bahupitta Kamala is one of the prominent conditions which attract attention of modern day.

In fact, in modern medicine, number of problems are still remained, especially in the treatment of liver diseases. Till today there is no satisfactory medicine. Naturally in adequacies in available medicines gives view towards the Ayurveda. The results of Ayurvedic preparations on the liver diseases are very outstanding. In Ayurvedic literature many herbs & kalpas are described for Bahupitta Kamala. Ayurvedic treatment is effective. There are many preparations are available in Ayurveda.

While treating Bahupitta kamala main line of treatment is Virechan, to bring proper flow of pittadosha in koshtha., Pittashamak, Yakrut uttejak, yakrut shodhan to normal flow of bile from liver in case of bahupitta kamala. Many of the Ayurvedic drugs like

Daruharidra, Kutaki, Arogyavardhini with errand patra swaras, Aragwadh, Bhumyamalaki, proved their efficacy in Bahupitta kamala as studied by students. But the comparative study between “KAMALAHAR YOG” (Charak Chikitsa Sthana 16/98) & “VASAADI KASHAYA” (Bhaishjya Ratnawali, pandurog Chikitsa 12/23) in Bahupitta Kamala is not evaluated yet. Drug from KAMALAHAR YOG- Haridra churna (2.37gm), Haritaki churna (2.37gm), Loha bhasma (250mg) With Madhu and Ghrita follow the chikitsasutra siddhanta of Bahupitta Kamala through Rasa, virya, vipaka etc. As well as drugs are easily available and cost effective. Drugs from VASAADI KASHAYA- Vasa Twak, Guduchi, Kutaki, Neem Twak, Chirayta. Decoc-tion with Madhu (Honey) follow the Chikitsasutra siddhanta of Bahupitta kamala through Rasa, Virya, Vipaka etc. As well as drugs are easily available and cost effective.



MATERIALS & METHODS

Total 60 patients of *Bahupitta Kamala* were randomly selected and equally divided into two groups.

1) Trial Group: In this group, 30 patients of *Bahupitta Kamala* were given *Kamalahar yog* (*Haritaki Churna-1.25gm, Hirda Churna-1.25gm, Loha Bhasma-250mg*) 3 gm twice a day with *Madhu & Ghrita* (Unequal quantity) for maximum of 21 days.

2) Comparative Group: In this group, 30 patients of *Bahupitta Kamala* were given *Vasaadi Kwatha* (*Vasa Twak, Guduchi, Neem Twak, Chirayta, Kutki*- All in equal Parts) 30ml twice a day with *Madhu* for maximum of 21 days.

Criteria for selection:

Inclusion criteria: Age - 10-60 years, Sex- Male and Female, Patient with signs and symptom of *Bahupitta Kamala*, Patient having serum bilirubin level above 1.3mg/dl and below 20mg/dl.

Exclusion criteria: Patients having *Ruddhpath Kamala*, Pregnancy and Lactating mother, Cases of liver cirrhosis, liver abscess, malignancy of liver, etc., Immuno-compromised patients like AIDS (HIV positive), HbsAg positive, etc, Patients in acute alcohol

withdrawal state, intoxication Hepatic encephalopathy, Serum bilirubin level more than 20mg/dl., Psychotic patients, Hyperbilirubinemia due to congenital cause, Drug Toxicity, AKT, etc., Hyperbilirubinemia due to Surgical obstructive pathology.

Diagnostic criteria: Patients with classical symptoms of *Bahupitta Kamala*, Serum bilirubin level above 1.3mg/dl., SGPT (ALT) above 45 I/DL U/L., SGOT (AST) above 40 IU/L.

Parameters of assessment: Subjective assessment- *Twakapeetata, PeetaMutrata, Netra Peetata, PurishPeetata, Chhardi, Yakrutavidhi, Jvara, Aruchi, Udarshool, Daha, Avipaka & Sadana.*

Objective assessment: *Bahupitta Kamala* assessed objectively by laboratory methods on the basis of values of liver function tests, urine examination.

OBSERVATIONS

STATISTICAL ANALYSIS

Clinical data obtained from patients was analyzed statistically in terms of Mean score, percentage of relief, Standard Deviation (S.D.), Standard Error (S.E.) by following tests.

Table 1: Showing Effect of therapy on Symptoms Score of 60 Patients.

S.No	Symptoms	Trial Group				Comparative Group			
		BT	AT	Diff	% of relief	BT	AT	Diff	% of relief
1	<i>Twaka peetata</i>	64	9	55	85.93%	59	9	50	84.74%
2	<i>Peeta Mutrata</i>	53	6	47	88.67%	59	11	48	81.35%
3	<i>Netra Peetata</i>	49	5	44	89.79%	54	10	44	81.48%
4	<i>Purish Peetata</i>	61	9	52	85.24%	63	12	51	80.95%
5	<i>Chhardi</i>	21	2	19	90.47%	20	4	16	80%
6	<i>Yakrit Vridhi</i>	29	2	27	93.10%	31	4	27	87.09%
7	<i>Jwara</i>	34	6	28	80%	35	6	29	82.85%
8	<i>Aruchi</i>	41	7	34	82.92%	28	8	20	71.42%
9	<i>Udarshool</i>	21	5	16	76.19%	23	6	17	73.91%
10	<i>Daha</i>	51	13	38	74.50%	48	12	36	75%
11	<i>Avipaka</i>	24	7	17	70.83%	26	6	20	76.92%
12	<i>Sadana</i>	41	18	23	56.09%	47	14	33	70.21%
	Total	489	89	400	81.79%	493	102	391	79.31%

Table 2: Showing effect on symptoms of 30 patients of *Bahupitta Kamala* of Trial Group by Wilcoxon-Matched-Pairs-Signed- Ranks Test

Sr. no.	Symptoms		Mean	SD	SEd	W	N	Z	P
1	<i>Twaka peetata</i>	BT	2.133	0.8193	0.1496	465	30	4.78	<0.0001
		AT	0.300	0.4661	0.0851				
		Dif.	1.833	0.8339	0.1523				
2	<i>Peeta Mutrata</i>	BT	1.767	0.6789	0.1240	465	30	4.78	<0.0001
		AT	0.200	0.4068	0.0742				
		Dif.	1.567	0.5683	0.1038				
3	<i>Netra peetata</i>	BT	1.633	0.7184	0.1312	465	30	4.78	<0.0001
		AT	0.166	0.3790	0.0692				
		Dif.	1.467	0.6288	0.1148				
4	<i>Purish peetata</i>	BT	1.967	0.8503	0.1552	465	30	4.78	<0.0001
		AT	0.300	0.4661	0.0851				
		Dif.	1.667	0.6609	0.1207				
5	<i>Chhardi</i>	BT	0.700	0.6513	0.1189	171	18	3.72	<0.0001
		AT	0.066	0.2537	0.0463				
		Dif.	0.633	0.5561	0.1015				
6	<i>Yakrita Vridhi</i>	BT	0.966	0.7184	0.1312	253	22	4.10	<0.0001
		AT	0.100	0.3051	0.0557				
		Dif.	0.866	0.6288	0.1148				
7	<i>Jwara</i>	BT	1.133	0.6814	0.1244	325	25	4.37	<0.0001
		AT	0.200	0.4068	0.0742				
		Dif.	0.933	0.5208	0.0950				
8	<i>Aruchi</i>	BT	1.367	0.8087	0.1477	276	23	4.19	<0.0001
		AT	0.233	0.4302	0.0785				
		Dif.	1.133	0.8996	0.1642				
9	<i>Udarshool</i>	BT	0.700	0.7497	0.1369	105	14	3.29	<0.0001
		AT	0.166	0.3790	0.0692				
		Dif.	0.533	0.6288	0.1148				
10	<i>Daha</i>	BT	1.700	0.6513	0.1189	465	30	4.78	<0.0001
		AT	0.433	0.6261	0.1143				
		Dif.	1.267	0.4498	0.0821				
11	<i>Avipaka</i>	BT	0.800	0.7611	0.1390	120	15	3.40	<0.0001
		AT	0.233	0.4302	0.0785				
		Dif.	0.566	0.6261	0.1143				
12	<i>Sadana</i>	BT	1.367	0.6149	0.1123	210	20	3.92	<0.0001
		AT	0.600	0.5632	0.1028				
		Dif.	0.766	0.6261	0.1143				

Table 3: Showing effect on symptoms of 30 patients of *Bahupitta Kamala* of Comparative Group by Wilcoxon-Matched-Pairs-Signed- Ranks Test

Sr. no.	Symptoms		Mean	SD	SEd	W	N	Z	P
1	<i>Twaka peetata</i>	BT	1.967	0.7649	0.1396	465	30	4.78	<0.0001
		AT	0.300	0.4661	0.0851				
		Dif.	1.667	0.6065	0.1107				
2	<i>Peeta Mutrata</i>	BT	1.967	0.7184	0.1312	465	30	4.78	<0.0001
		AT	0.366	0.4901	0.0894				
		Dif.	1.600	0.6215	0.1135				
3	<i>Netra peetata</i>	BT	1.800	0.7611	0.1390	465	30	4.78	<0.0001
		AT	0.333	0.4795	0.0875				
		Dif	1.467	0.6288	0.1148				
4	<i>Purish peetata</i>	BT	2.100	0.7589	0.1385	435	29	4.68	<0.0001
		AT	0.400	0.4983	0.0909				
		Dif	1.700	0.5960	0.1088				
5	<i>Chhardi</i>	BT	0.666	0.7112	0.1298	120	15	3.36	<0.0001
		AT	0.133	0.3457	0.0631				
		Dif	0.533	0.5713	0.1043				
6	<i>Yakrita Vridhi</i>	BT	1.033	0.9279	0.1694	210	20	3.92	<0.0001
		AT	0.133	0.3457	0.0631				
		Dif	0.900	0.8030	0.1466				
7	<i>Jwara</i>	BT	1.167	0.9855	0.1799	231	21	4.01	<0.0001
		AT	0.200	0.4068	0.0742				
		Dif	0.966	0.8087	0.1477				
8	<i>Aruchi</i>	BT	0.933	0.8683	0.1585	136	16	3.51	<0.0001
		AT	0.266	0.4498	0.0821				
		Dif	0.666	0.7112	0.1298				
9	<i>Udarshool</i>	BT	0.766	0.9353	0.1708	120	15	3.40	<0.0001
		AT	0.200	0.4842	0.0884				
		Dif	0.566	0.6261	0.1143				
10	<i>Daha</i>	BT	1.655	0.8140	0.1512	334	26	4.24	<0.0001
		AT	0.400	0.5632	0.1028				
		Dif	1.241	0.8724	0.1620				
11	<i>Avipaka</i>	BT	0.866	0.8193	0.1496	136	16	3.51	<0.0001
		AT	0.200	0.4068	0.0742				
		Dif	0.666	0.7112	0.1298				
12	<i>Sadana</i>	BT	1.567	0.8584	0.1567	276	23	4.19	<0.0001
		AT	0.466	0.6288	0.1148				
		Dif	1.100	0.8449	0.1543				

Table 4: Showing comparison between two groups after treatment with respect to symptoms score by Mann-Whitney Test

Sr. No.	Group	MD	SD	SEd	U	U'	A	B	P	Significance
1	<i>Twaka Peetata</i>				450	450	915	915	0.4970	Not Significant
	Trial	0.3000	0.4661	0.0810						
	Compa-Rative	0.3000	0.4661	0.0810						
2	<i>Peeta Mutrata</i>				375	525	840	990	0.1295	Not Significant
	Trial	0.2000	0.4068	0.0742						
	Compa-Rative	0.3667	0.4901	0.0894						
3	<i>Netra Peetata</i>				435	465	930	900	0.4132	Not Significant
	Trial	0.3667	0.4901	0.0894						
	Compa-Rative	0.3333	0.4795	0.0875						
4	<i>Purish Peetata</i>				405	495	870	960	0.2508	Not Significant
	Trial	0.3000	0.4661	0.0851						
	Compa-Rative	0.4000	0.4983	0.0909						
5	<i>Chhardi</i>				420	480	885	945	0.3234	Not Significant
	Trial	0.0666	0.2537	0.0463						
	Compa-Rative	0.1333	0.3457	0.0631						
6	<i>Yakrita Vridhi</i>				435	465	900	930	0.4110	Not Significant
	Trial	0.1000	0.3051	0.0557						
	Compa-Rative	0.1333	0.3457	0.0631						
7	<i>Jwara</i>				450	450	915	915	0.4969	Not Significant
	Trial	0.2000	0.4068	0.0742						
	Compa-Rative	0.2000	0.4068	0.0742						
8	<i>Aruchi</i>				435	465	900	930	0.4126	Not Significant
	Trial	0.2333	0.4302	0.0785						
	Compa-Rative	0.2667	0.4498	0.0821						
9	<i>Udarshool</i>				447	452	912	917	0.4877	Not Significant
	Trial	0.1667	0.3790	0.0692						
	Compa-Rative	0.2000	0.4842	0.0884						
10	<i>Daha</i>				444	455	920	909	0.4699	Not Significant
	Trial	0.4333	0.6261	0.1143						
	Compa-Rative	0.4000	0.5632	0.1028						
11	<i>Avipaka</i>				435	465	930	900	0.4121	Not Significant
	Trial	0.2333	0.4302	0.0785						
	Compa-Rative	0.2000	0.4068	0.0742						

	Rative								
12	Sadana				386	514	979	851	Not Significant
	Trial	0.6000	0.5632	0.1028					
	Compa-Rative	0.4667	0.6288	0.1148					

Table 5: Showing effects of therapy on Haematological parameters of Trial group by paired-t test

Sr.no.	Investigation		Mean	SD	SEd	T	P	Significance
1	Sr. Bilirubin	BT	4.863	2.399	0.438	9.445	<0.0001	Extremely Significant
		AT	1.033	0.4318	0.078			
		Dif.	3.830	2.4055	0.405			
2	SGOT	BT	195.90	124.01	22.640	7.737	<0.0001	Extremely Significant
		AT	55.433	42.762	7.807			
		Dif.	140.47	99.443	18.156			
3	SGPT	BT	198.37	115.34	21.057	8.150	<0.0001	Extremely Significant
		AT	45.867	21.806	3.981			
		Dif	152.50	102.49	18.712			
4	Urine Bile Salt	BT	1.733	0.9444	0.1724	9.256	<0.0001	Extremely Significant
		AT	0.3667	0.4901	0.0894			
		Dif	1.367	0.8087	0.1477			
5	Urine Bile Pigment	BT	1.933	0.8683	0.1585	9.336	<0.0001	Extremely Significant
		AT	0.4000	0.5632	0.1028			
		Dif	1.533	0.8996	0.1642			

Table 6: Showing effects of therapy on Haematological parameters of Comparative group by paired-t test

Sr. no.	Investigation		Mean	SD	SEd	T	P	Significance
1	Sr. Bilirubin	BT	3.517	1.858	0.339	8.15	<0.0001	Extremely Significant
		AT	0.996	0.369	0.067			
		Dif.	2.520	1.722	0.314			
2	SGOT	BT	186.60	149.08	27.21	5.503	<0.0001	Extremely Significant
		AT	41.133	10.824	1.976			
		Dif.	145.47	144.77	26.43			
3	SGPT	BT	149.40	73.648	13.44	9.744	<0.0001	Extremely Significant
		AT	45.300	21.945	4.007			
		Dif	104.10	58.516	10.684			
4	Urine Bile Salt	BT	1.733	0.9072	0.1656	8.968	<0.0001	Extremely Significant
		AT	0.333	0.4795	0.0875			
		Dif	1.400	0.8550	0.1561			
5	Urine Bile Pigment	BT	1.933	0.8277	0.1511	15.09	<0.0001	Extremely Significant
		AT	0.3667	0.4901	0.0894			
		Dif	1.567	0.5683	0.1038			

Table 7 Showing comparison between two group by Unpaired 't' Test on Hematological parameters

Sr. No.	Group	MD	SD	SEd	T	F	P	Significance
1	Sr. Bilirubin				0.3536	1.369	0.7249	Not Significant
	Trial	1.033	0.4318	0.0788				
	Compa Rative	0.9967	0.3690	0.0673				
2	SGOT				1.776	15.609	0.0810	Not Significant
	Trial	55.433	42.762	7.807				
	Compa Rative	41.133	10.824	1.976				
3	SGPT				0.1003	1.013	0.9204	Not Significant
	Trial	45.867	21.806	3.981				
	Compa Rative	45.300	21.945	4.007				
4	Urine Bile Salt				0.2663	1.045	0.7910	Not Significant
	Trial	0.3667	0.4901	0.0894				
	Compa Rative	0.3333	0.4795	0.0875				
5	Urine Bile Pigment				0.2445	1.321	0.8077	Not Significant
	Trial	0.4000	0.5632	0.1028				
	Compa Rative	0.3667	0.4901	0.0894				

Table 8: Showing Total effect of therapy in 60 patients of *Bahupitta Kamala*

S.N.	Total effects of therapy	Trial Group		Comparative Group		Total	
		No. of Pts	%	No. of Pts	%	No. of Pts	%
1	Cured	20	66.66%	19	63.33%	39	65%
2	Markedly Improved	10	33.33%	11	36.66%	21	35%
3	Improved	0	00.0%	0	00.0%	0	00.0%
4	Unchanged	0	00.0%	0	00.0%	0	00.0%

Table 9: Showing comparison between two groups by Chi-square Test

S.N.	Group	Cured	Markedly Improved	Total	Chi Square Value
1	Trial Group	20	10	30	0.07326 p>0.05
2	Comparative Group	19	11	30	
	Total	39	21	60	

Effect of therapy on symptom score:

It was observed that overall % of relief was more in Trial group (81.79%) than in Comparative group (79.31%). The symptoms such *astwakapeetata*, *peetamutrata*, *netrapeetata*, *purishpeetata*, *chhardi*, *yakritavrudhi*, *jwara*, *aruchi*, *udarshool*, *daha*, *avipaka* and *sadana* were studied in this series as described.

Total effect of therapy:

In case of Trial group 20 (66.66%) patients were cured, 10 (33.33%) patients were markedly improved. In case of Comparative group, 19 (63.33%) patients were cured, 11 (36.66%) patients were markedly improved.

Comparison between two groups was statistically evaluated by Chi Square Test. The Chi-square value is 0.07326; $P > 0.05$ (0.7866) which was statistically insignificant which suggested that there is no significant difference between two groups with respect to total effect of therapy.

DISCUSSION

Here we selected 60 patients of *Bahupitta Kamala* having their written consent. These patients were randomly divided into two groups. First group was termed as Trial Group comprising of 30 patients who were administered *Kamalahar Yog* 3 gm twice a day with *madhu* and *ghruta* (Unequal quantity) for 21 days. Another group called as Comparative group also comprise of 30 patients who were given *Vasaadi kwatha* with *madhu* twice a day for 21 days. All the patients were strictly examined according to the criteria of diagnosis and included in the study. Fulfillment of inclusion criteria of selection was observed.

Before starting the treatment, patients were observed for every sign and symptom. Status of these symptoms was recorded one day prior to start of treatment as well as investigations were done as per criteria of assessment. Treatment was given for 21 days duration. For the purpose of symptomatic improvement, a follow up of every week was kept. Sr. Bilirubin, SGOT, SGPT, Urine bile salt & bile pigment was done weekly to observe the effects. Another investigation was done before and after treatment. All concerned symptoms and investigations, detailed history and *Rugna-Pariksha* were recorded in the CRF.

CONCLUSION

The probable mode of action of *Kamalahar yog* causes *Mruduvirechana*. After analysis, it was concluded that *Kamalahar yog* with *Madhu & Ghruta* (Unequal quantity) used in trial group shown significant results as compared to *Vasaadi Kwatha* with *Madhu* used in comparative group.

The statistical evaluation of *Kamalahar yog* in *Bahupitta Kamala* has shown extremely significance in both the parameters. The parameters studied are shown in table-*twakapeetata*, *peetamutrata*, *netrapee-*

tata, *purishpeetata*, *chhardi*, *yakritavrudhi*, *jwara*, *aruchi*, *udarshool*, *daha*, *avipaka*, *sadana* has shown extremely significance with the P-Value as < 0.0001 . Serum bilirubin, SGOT, SGPT, urine bile salt & urine bile pigment also shown P-value as < 0.0001 , which is extremely significant.

So, the *Kamalahar yog* is very economical, safe and effective drug hence it can be employed safely in *Bahupitta Kamala*, which gives satisfactory result.

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Source of Support: Nil

Conflict Of Interest: None Declared

How to cite this URL: Arshadkhan Rasulkhan Pathan & Sunil A. Bhaskare: A Comparative Clinical Study Of 'Kamalahar Yog & Vasaadi Kwatha' In The Management Of Bahupitta Kamala With Special Reference To Hyperbilirubinaemia. International Ayurvedic Medical Journal {online} 2019 {cited August, 2019} Available from: http://www.iamj.in/posts/images/upload/1266_1274.pdf