Published online in http://ijam.co.in
ISSN: 0976-5921

Research Article

The Effect of Rasakarpura Drava on Kshudra Kustha

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Abstract

Rasakarpura, a Nirgandh type of Kupipakva Rasayana, used to cure skin disease. Rasakarpura was prepared as per the reference of Rasatarangini 6/65-71. It is prepared with Parada (mercury), Sandra Gandhakamla (concentrated sulphuric acid) and Saindhava Lavana (rock salt) in the ratio of 1: 1 ½ and approx 1 ½ . The clinical study was carried out on 80 patients of Kshudra Kustha by using Rasakarpura Drava (0.1 % solution in distilled water) and same was compared with a standard drug i.e. Gandhaka Malahara. The obtained results of clinical trial suggest that both drugs have highly significant result on the cardinal symptoms of Kshudra Kustha.

Key Words: Rasakarpura, Rasakarpura Drava, Valuka Yantra, Gandhaka Malahara, Kshudra Kustha

Introduction:

Rasa Chikitsa is considered as the best among others due to their qualities. The drug formulations are to be found more potent and effective in terms of disease curing. There are so many drug formulations have been described by Rasacharyas and Rasakarpura is Nirgandh type of Parada compound which should be used more precautiously due to their minute dose and high efficacy along with some toxic effects like tastelessness, burning sensation in thorax, gingivitis, vomiting, melena, death etc in acute stage and abdominal pain, convulsion, fever, heamoptysis, gingivitis, death etc in chronic stage (1). The Kustha, a group of skin diseases are burning problem nowadays due to deforms in the normal structure of skin and patient become hateful in the society. Kshudra Kustha is diseases affecting the Twak and comprises with following symptoms described in Charak Samhita Chikitsasthan 7/21-26 Kandu (itching), Srava (discharge), Vaivarnya (discoloration), Daha (burning), Matsyasaklopam (scaling), Pidika (papillae), Avadarana (cracking) (2).

. It is described by all the Acharyas in their concerned classics. The disease often manifest on the external surface of the body. So Rasakarpura is prescribed in solution form as according to the reference of Rasa Tarangini 6/103 for local application by using cotton and apply genially along with the restricted salty and fermented diet.

Rasakarpura is used as internal medicine in disease like Phiranga (syphilis), Atisara (diarrhea), Twak Vikara

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Published online in http://ijam.co.in
ISSN: 0976-5921
International Journal of Ayurvedic Medicine, 2011, 2(2), 81-92

(skin diseases) etc. (3). It is also used as external drugs for local application in the form of Rasakarpura Drava (4) in different skin diseases and considered one of the best remedies for it.

The ultimate object of drug research is to get solution which will be therapeutically effective and safe for all. In present study, Rasakarpura is used as Rasakarpura Drava and Gandhaka Malahara is used as known standard drug, both are subjected to patients of Kshudra Kushtha for evaluating therapeutic efficacy on Kshudra Kushtha Roga (skin disorder).

The previous study of Rasakarpura on Vicharchika (eczema) as internal used reported significant result without any toxic or adverse effect (5). Amongst mercurial compounds it quite water soluble so it is absorbed through gut and skin (6) and produced effects. Though it is resembles to mercuric chloride ($HgCl_2$) Rasakarpura is a mixture of Mercuric Chloride and other trace elements so it is found less toxic in therapeutic dose (7).

Aims and objectives:

- To evaluate the effect of Rasakarpura Drava and Gandhaka Malahara on general symptoms of Kshudra Kustha.
- To observe the effect of Rasakarpura Drava and Gandhaka Malahara on haematological and bio chemical parameters.

Materials and methods:

Rasakarpura preparation method was firstly described under the heading of Shweta Parada Bhasma as "Ghansara Rasa" by Rasaprakash Sudhakara in 12th century AD(8). Acharya Ananatadev Suri was the first man (9) who mentioned the Rasakarpura word which indicated its main content i.e. Rasa (mercury) and its physical property i.e. Karpura Varna (white colour).

Rasakarpura is highly toxic drug and is enlisted in the list of poisonous substances under the Ayurvedic and Unani system of medicine in schedule E1 of drugs and cosmetic act 1940 (10).

For the preparation of Rasakarpura Drava one gram - 1 g of Rasakarpura was dissolved in one litre - 1 L of distilled water and filtrated through simple filter paper to make 0.1% dilution (11).

Siktha Taila was prepared by 1:5 ratios of Siktha and Tila Taila (12). 20 part of Shuddha Gandhaka Churna was added at 70^0C and mixed well for preparing the Gandhaka Malahara.

Criteria for Selection of Patients:

- The patient having classical symptom of Kshudra Kushtha like Kandu (itching), Srava (discharge), Vaivarnya (discoloration), Daha (burning), Matsyasaklopam (scaling), Pidika (papillae), Avadarana (cracking), were selected from O.P.D. and I.P.D. of I.P.G.T. & R.A., Hospital, Jamnagar.
- Age group of patients is between 15 – 75 years.
- A special detailed proforma was prepared for comparing all the signs and symptoms based on both the Ayurvedic and Modern description and a detailed history of each patient was taken.
- Laboratory investigations like TC, DC, ESR, blood sugar, blood urea, S. bilirubin etc. were carried out.

Groups:

Selected patients were randomly divided into two groups –

- **Group A:** In this group, patients were treated with Rasakarpura Drava as an external application.
- **Group B:** In this group, patients were treated with Gandhaka Malahara as an external application.

Posology:

Dose: Raskarpura Drava - Q. S., bds. (min packing of 30 ml for a week or as per requirement)

Gandhaka Malahara - Q. S., bds. (min packing of 50 g for a week or as per requirement)

Duration: Rasakarpura Drava - 30 days

Gandhaka Malahara - 30 days

ADVICE:

- Patients were advised to avoid Nidana, Viruddha Ahara like fish with milk, Yavaka, Udalaka, Dadhi and Vihara like Divaswapa, sinful acts etc (13), and also fermented foods etc., during the treatment schedule.
- Patients were advised to keep the drug from the reach of children and apply it carefully to avoid its toxic effects.

Criteria for Assessment

Scoring Pattern

Kandu (Itching)

- No itching 0
- Occasionally itching + 1
- Mild itching + 2
- Mild to moderate itching + 3
- Severe itching + 4

Vaivarnya (Discolouration)

- Normal colour 0
- Not normal but near to normal +1
- Reddish colouration +2
- Slight black reddish discolouration +3
- Deep black reddish discolouration +4

Srava (Discharge)

- No discharge 0
- Occasionally discharge +1
- Discharge on itching +2
- Mild to moderate discharge on itching +3
- Severe discharge +4

Daha (Burning sensation)

- No burning 0
- Occasionally +1
- Mild burning +2
- Mild to moderate burning +3
- Severe burning +4

Matsya Saklopam (Scaling)

- No scaling 0
- Mild scaling by rubbing or by itching + 1
- Moderate scaling by rubbing or by itching + 2
- Sever scaling by rubbing or by itching + 3
- Scaling without rubbing or itching + 4

Shoola (Pain)

- No pain 0
- Occasionally pain +1
- Mild pain on touch +2
- Mild to moderate pain +3
- Severe pain +4

Pidika (Papillae)

- No papillae 0
- Starting of papillae +1
- Moderately developed papillae +2
- Spreaded over extremities +3
- Severely spreaded all over body +4

Avadarana (Crack)

- No crack 0
- Just superficial crack +1
- Mild to moderate crack +2
- 0.5 to 1.0 cm deep crack +3
- Crack with bleedings +4

Criteria for Total Assessment Of Therapy:

The result of the therapy were assessed after the completion on the basis of –

- Improvement in selected symptoms and signs of diseases.
- Investigations conducted before and after treatment.

Published online in http://ijam.co.in
ISSN: 0976-5921
International Journal of Ayurvedic Medicine, 2011, 2(2), 81-92

The results of therapy have been categorized under four categories on the basis of improvement in symptoms.

(1) **Complete and markedly improvement:** 75 – 100% relief in the signs and symptoms was considered as complete and markedly improvement.
(2) **Moderately improvement:** >50% and <75% relief was considered as moderate improvement in signs and symptoms.
(3) **Mild improvement:** 26 – 50% relief in the signs and symptoms was considered as mild improvement.
(4) **Unchanged:** Below 25% relief was considered as unchanged.

Follow Up: Patient was revived after 7 days for a period of 30 days.

Statistical Analysis:

The obtained data were analyzed statistically. The values were expressed as mean ± SEM. The data were analyzed by paired 't' test and comparison of both test drugs was analyzed by unpaired 't' test a level of $P<0.05$ and $P<0.01$ were considered as statistical significant and highly significant respectively.

Observations and Results:

For clinical trial total 80 patients were registered. 45 patients were registered in group A, out of which 30 patients have completed the treatment course and 7 patients had complete relief in chief complaints within 30 days duration and 8 patients left against medical advice. In group B, total 35 patients were registered out of which 20 patients have completed the treatment course and 8 patients had complete relief in chief complaints within 30 days duration and 7 patients left against medical advice.

From registered patients, 51.25% were female while remaining i.e. 48.75% patients were male. The maximum number i.e. 35.00% of patients each were of 15 – 30 years and 31 – 45 years of age group, while 20% to 46 – 60 years and only 10% of the patients were belonged to 61 – 75 years of age group. The data of Deha Prakriti depicts that maximum numbers of patients i.e. 38.75% were having Pitta-kapha Prakriti, while 31.25% were of Kapha-vata Prakriti and 30.00% patents were having Vata-pitta Prakriti.

The data pertaining to the effect of test drug and standard drug on cardinal symptoms have been presented in Table – 1. Haematological parameters (Table – 2) and Biochemical parameters (Table – 3) obtained data show the effect of test group and standard group on ESR (mm) reveals that, statistically non-significant decrease was found in test group, but statistically significant decrease was observed in standard group. Other parameters remain statistically non significant.

The data of the chief complaints in Table - 4 shows that majority of the patients i.e. 90.00% were suffering from Kandu (itching) followed by 74.00% had Vaivarnyata (discolouration), 46.00% had Daha (burning sensation), 30.00% had Matsyasaklopam (scaling), 28.00% had Shoola (pain) and 18.00% each in Pidika (papillae) and Avadarana (crack).

Markedly improvement was found in the symptoms like Kandu (81.48%), Vaivarnya (26.09%), Srava (84.21%), Daha and Matsyasaklopam each (78.57%), Shoola (83.33%), Pidika (66.67%) and Avadarana (50.00%) in Rasakarpura Drava treated group (group A), while Kandu (83.33%), Vaivarnya (42.86%), Srava, (75.00%), Daha (77.78%), Shoola (87.50%), Pidika (100%) and Avadarana (28.57%) in Gandhaka Malahara treated group (group B). (Table – 5)

Moderate improvement was found in the symptoms like Kandu (18.52%), Vaivarnya (73.91%), Srava, (15.79%), Daha (21.43%), Matsyasaklopam (21.43%), Shoola (16.67%), Pidika (16.67%) and Avadarana (50.00%) in

Rasakarpura Drava treated group (group A), while Kandu (16.67%), Vaivarnya (50.00%), Srava, (12.50%), Daha (11.11%), Shoola (100%) and Avadarana (71.43%) in Gandhaka Malahara treated group (group B). (Table – 5)

However, mild improvement was observed in the symptoms Daha i.e. 11.11% only in Gandhaka Malahara treated group (group B). No patient found in Rasakarpura Drava treated group (group A) under this criteria. (Table – 5)

In Rasakarpura Drava treated group (group A), patients were found in Pidika (16.67%), while in Gandhaka Malahara treated group (group B) Vaivarnya (7.14%), Srava (12.50%) and Shoola (12.50%) were remained unchanged. (Table – 5)

On considering the data of general symptoms, it can be said that statistically significant result ($P<0.05$) was obtained in Kandu, while significant result was also found in Srava ($P<0.05$), whereas statistically non-significant results ($P>0.1$) were found in Vaivarnya and Daha in Rasakarpura Drava treated group (group A) in comparison to Gandhaka Malahara treated group (group B). (Table – 6)

Discussion:

The mercuric chloride is soluble in water while Mercurous Chloride is almost insoluble in water (14). The analytical study suggests that Rasakarpura prepared by Rasa Tarangini method is 97.98% soluble in distilled water (15) so it is confirmed that Rasakarpura prepared by Rasa Tarangini method is mercuric chloride along with Sodium, Magnesium, Calcium etc trace elements (16) and due to this solution was prepared in distilled water for clinical trial.

The present study was planned to evaluate the efficacy of Rasakarpura Drava and Gandhaka Malahara on Kshudra Kustha. Clinical trial was carried out on 80 patients having classical signs and symptoms of Kshudra Kustha. The patients were selected irrespective of their age, sex, religion etc. Selected patients were divided randomly into two groups i.e. group A and B treated with Rasakarpura Drava and Gandhaka Malahara respectively. The results were analyzed on the basis of improvement in classical features. Investigation parameters (hematological and biochemical) were also considered as supporting criteria for assessment.

Total 45 patients were registered in group A, out of them 30 patients completed the treatment, 7 patients were relieved completely from the chief complaints within 28 days of treatment and so they did not want to continue the treatment, 8 patients left against medical advice. In group B, total 35 patients were registered out of them 20 patients completed the treatment, 8 patients completely relieved from the chief complaints within 28 days of treatment schedule and so did not want to complete the treatment, 7 patients left against medical advice. It can be said that Rasakarpura Drava and Gandhaka Malahara both drugs are very effective on the chief symptoms of disease. Complaints are quickly relieved by drugs.

Discussion on General Observation:

Sex:

It was observed that 51.25% of patients were female and 48.75% were male. On the basis of data it can be said that the disease occur in both sex almost equally.

Age:

Maximum numbers of patients i.e. 35% each were from the age groups of 15–30 and 31–45 years. The results suggest that diseases are prevalent in younger age.

Deha Prakriti:

Maximum numbers of patients were having Pitta-kapha Prakriti, but the numbers of the patients in other groups are very nearer to it and Deha Prakriti also depends on the age which shows, this

disease have no relation to the Deha Prakriti of patients.

Disease:

Out of all Kshudra Kustha – Dadru, Ekakustha and Vicharchika are common. The occurrence may be due to climatic condition, because these types of diseases occur chiefly in humid area and the place where this study was carried out is humid region.

Effect of therapy in improvement on chief symptoms:

Effect of Rasakarpura Drava (group A), in improvement on the chief symptoms of Kshudra Kustha was found to be statistically highly significant. At the level of $P<0.001$ were obtained in Kandu, Vaivarnya, Srava, Daha and Matsyasaklopam; Shoola and Pidika at level of $P<0.05$; and in Avadarana $P>0.1$ improvement was observed. Effect of Gandhaka Malahara (group B), in improvement on the chief symptoms of Kshudra Kustha was also found to be statistically highly significant. At the level of $P<0.001$ were obtained in Kandu and Vaivarnya; while $P<0.01$ were obtained in Srava, Daha, Shoola and Avadarana, while in Matsyasaklopam and Pidika apparent improvement was observed. (Graph – 1)

Effect of Therapy on hematological parameters:

Analysis of the results shows that total 8 hematological parameters were studied. Out of these only ESR was found to be decreased statistically significant in Gandhaka Malahara treated group (group B). In Rasakarpura Drava applied group non-significant decrease was observed in WBC, lymphocyte, monocyte and ESR and statistically non-significant increase was found in PCV; while non-significant increase in WBC, neutrophil, hemoglobin, PCV and non-significant decrease in lymphocyte and eosinophil was observed in Gandhaka Malahara treated group. Erythrocyte Sedimentation Rate (ESR) was decreased significantly in Gandhaka Malahara treated group is suggestive of significant progress in the condition of chronic infection in the patients of this group.

Effect of Therapy on biochemical parameters:

Analysis of the results of obtained biochemical parameters shows that local application of Rasakarpura Drava and Gandhaka Malahara did not produce any significant alteration in any of the studied parameters.

Comparative effect of test drug and standard drug on the improvement of symptoms of Kshudra Kustha

The main aim of the present study was to evaluate the better therapeutic efficacy of Rasakarpura Drava and Gandhaka Malahara. So the comparative results of therapy on various symptoms are being presented here.

Markedly improvement was observed in symptoms like Srava, Daha, Matsyasaklopam, Avadarana whereas moderately improvement in Kandu, Vaivarnya, Srava, Daha, Shoola, Pidika while no change in Pidika symptoms was found in Rasakarpura Drava treated group.

Gandhaka Malhara treated group shows markedly improvement in symptoms like Kandu, Vaivarnya, Shoola and Pidika while moderately improvement in Matsya Saklopam and Avadarana, while mild improvement in Daha and no change was found in Vaivarnya, Srava and Shoola symptoms.

Rasakarpura Drava shows better improvement in the cardinal symptoms of the patients of Kshudra Kustha in comparison to Gandhaka Malahara treated patients, when overall improvement in the cardinal symptoms is considered. The comparative improvement was found to be statistically significant in Kandu and Srava symptoms and non-significant in Daha, while in Vaivarnya both drugs were found to be equally effective.

Conclusion:

Rasakarpura and Gandhaka Malahara both are found to be effective in the symptoms of Kshudra Kustha on local application, but effect of Rasakarpura Drava is observed better than that of standard drug i.e. Gandhaka Malahara.

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Published online in http://ijam.co.in
ISSN: 0976-5921
International Journal of Ayurvedic Medicine, 2011, 2(2), 81-92

Table – 1: Effect of test and standard drug in patients on cardinal symptoms of Kshudra Kustha

Symptoms	Group	Dose	Mean ± SEM			% change	't'	P
			B.T.	A.T.	Change			
Kandu	**A (n=30)**	Q.S.	2.40±0.20	0.27±0.08	2.13 ± 0.18	88.75↓	11.83	<0.001**
	B (n=20)	Q.S.	1.65± .21	0.20±0.12	1.45 ± 0.20	87.88↓	07.15	<0.001**
Vaivarnya	A (n=30)	Q.S.	1.67±0.19	0.57±0.09	1.10 ± 0.14	65.87↓	7.86	<0.001**
	B (n=20)	Q.S.	1.55±0.26	1.05±0.22	1.10 ± 0.22	70.98↓	5.00	<0.001**
Srava	A (n=30)	Q.S.	1.37±0.21	0.10±0.06	1.27±0.20	92.70↓	6.35	<0.001**
	B (n=20)	Q.S.	0.80±0.25	0.20±0.16	0.60±0.21	75.00↓	2.86	<0.01**
Daha	A (n=30)	Q.S.	0.83±0.17	0.10±0.06	0.77 ± 0.76	92.77↓	4.81	<0.001**
	B (n=20)	Q.S.	0.80±0.22	0.15±0.11	0.65 ± 0.18	81.25↓	3.61	<0.01**
Matsya Saklopam	A (n=30)	Q.S.	1.07±0.23	0.13±0.06	0.90 ± 0.20	84.11↓	4.50	<0.001**
	B (n=20)	Q.S.	0.10±0.10	0.05±0.05	0.05 ± 0.05	50.00↓	1.00	>0.1
Shoola	A (n=30)	Q.S.	0.37±0.15	0.03±0.03	0.33 ± 0.14	89.18↓	2.36	<0.05*
	B (n=20)	Q.S.	0.70±0.21	0.15±0.15	0.60 ± 0.20	85.70↓	3.00	<0.01**
Pidika	A (n=30)	Q.S.	0.33±0.14	0.07±0.05	0.27 ± 0.13	81.82↓	2.08	<0.05*
	B (n=20)	Q.S.	0.30±0.18	0.00±0.00	0.30 ± 0.18	100↓	1.67	>0.1
Avadarana	A (n=30)	Q.S.	0.13±0.09	0.03±0.03	0.10 ± 0.07	76.92↓	1.43	>0.1
	B (n=20)	Q.S.	1.00±0.33	0.35±0.13	0.65 ± 0.22	35.00↓	2.95	<0.01**

** = Highly significant * = Significant↓ = Decrease

Table – 2: Effect of test and standard drug on Haematological parameters in patients of Kshudra Kustha

Parameters	Group	Dose	Mean ± SEM			% change	't'	P
			B.T.	A.T.	Change			
Neutrophil(%)	A (n=30)	Q.S.	58.07±1.20	58.43±1.10	0.50±1.04	0.86↑	0.48	>0.1
	B (n=20)	Q.S.	58.20±1.21	59.95±1.77	1.75±1.75	3.01↑	1.0	>0.1
Lymphocyte (%)	A (n=30)	Q.S.	35.43±1.13	35.37±1.10	0.07±0.96	0.20↓	0.07	>0.1
	B (n=20)	Q.S.	35.20±1.17	34.00±1.74	1.20±1.73	3.41↓	0.69	>0.1
Eosinophyl (%)	A (n=30)	Q.S.	3.37 ± 0.22	3.27 ± 0.14	0.11±0.24	3.26↓	0.46	>0.1
	B (n=20)	Q.S.	3.60 ± 0.18	3.15 ± 0.15	0.45±0.22	12.50↓	2.05	>0.05
Monocyte (%)	A (n=30)	Q.S.	3.13 ± 0.09	2.93 ± 0.11	0.20±0.12	6.39↓	1.66	>0.1
	B (n=20)	Q.S.	3.00 ± 0.10	2.90 ± 0.10	0.10±0.14	3.33↓	0.71	>0.1
Hemoglobin (g%)	A (n=30)	Q.S.	12.28±0.27	12.43±0.30	0.11±0.21	0.90↑	0.52	>0.1
	B (n=20)	Q.S.	11.71±0.40	11.93±0.43	0.41±0.21	3.42↑	1.90	>0.05
PCV (%)	A (n=30)	Q.S.	38.12±0.74	38.72±0.83	0.60±0.54	1.57 ↑	1.11	>0.1
	B (n=20)	Q.S.	36.75±1.18	37.32±1.22	1.11±0.88	3.02↑	1.26	>0.1
ESR (mm)	A (n=30)	Q.S.	21.77±3.67	18.13±2.81	3.67±3.44	16.86↓	1.07	>0.1
	B (n=20)	Q.S.	31.20±4.74	22.70±3.42	8.50±3.61	27.24↓	2.35	<0.05*

↓ = Decrease ↑ = Increase * = Significant

Published online in http://ijam.co.in
ISSN: 0976-5921
International Journal of Ayurvedic Medicine, 2011, 2(2), 81-92

Table – 3: Effect of test and standard drug on Biochemical parameters in patients of Kshudra Kustha

Parameters	Group	Dose	Mean ± SEM			% change	't'	P
			B.T.	A.T.	Change			
Blood Sugar (mg/dl)	A (n=30)	Q.S.	93.22±2.06	95.93±4.16	3.87±4.29	4.15↑	0.90	>0.1
	B (n=20)	Q.S.	90.65±2.54	91.45±2.67	0.80±3.28	0.88↑	0.24	>0.1
S. creatinine (mg/dl)	A (n=30)	Q.S.	1.01 ± 0.03	1.97 ± 0.02	0.03±0.03	2.97↑	1.0	>0.01
	B (n=20)	Q.S.	1.01 ± 0.03	0.98 ± 0.02	0.03±0.03	2.97↓	1.0	>0.1
S. cholesterol (mg/dl)	A (n=30)	Q.S.	185.00±4.43	179.83±5.16	4.00±3.63	2.16↓	1.10	>0.1
	B (n=20)	Q.S.	194.95±7.48	186.80±5.12	8.15±5.22	4.18↓	1.56	>0.1
S. bilirubin (mg/dl)	A (n=30)	Q.S.	0.68 ± 0.04	0.67 ± 0.03	0.03± .03	4.41↓	0.75	>0.1
	B (n=20)	Q.S.	0.66 ± 0.04	0.61 ± 0.05	0.05±0.03	7.57↓	1.67	>0.1
SGPT (IU/L)	A (n=30)	Q.S.	20.43±0.93	20.63±0.87	0.17±1.02	0.83↑	0.17	>0.1
	B (n=20)	Q.S.	24.60±3.23	20.30±1.57	4.15±2.23	16.87↓	1.86	>0.05
SGOT (IU/L)	A (n=30)	Q.S.	20.53±0.75	20.93±0.71	0.04±0.97	1.97↑	0.41	>0.1
	B (n=20)	Q.S.	21.25±1.92	21.55±1.09	0.30±1.65	1.41↑	0.18	>0.1
Alkaline phosphatase (IU/L)	A (n=30)	Q.S.	66.10±4.03	65.67±3.04	0.43±4.19	0.65↓	0.10	>0.1
	B (n=20)	Q.S.	66.45±3.54	60.35±3.76	6.10±4.46	9.18↓	1.37	>0.1
S. albumin (g/dl)	A (n=30)	Q.S.	3.99 ± 0.04	3.99 ± 0.05	0.01±0.01	0.25↓	0.17	>0.1
	B (n=20)	Q.S.	4.09 ± 0.05	4.07 ± 0.06	0.03±0.06	0.73↓	0.50	>0.1
S. globuline (g/dl)	A (n=30)	Q.S.	3.18 ± 0.05	3.10 ± 0.03	0.09±0.05	2.83↓	1.80	>0.05
	B (n=20)	Q.S.	3.22 ± 0.06	3.18 ± 0.05	0.04±0.07	1.24↓	1.57	>0.1
A/G Ratio	A (n=30)	Q.S.	1.25 ± 0.02	1.23 ± 0.02	0.03±0.03	2.40↓	1.0	>0.1
	B (n=20)	Q.S.	1.23 ± 0.03	1.25 ± 0.02	0.02±0.04	1.63↑	0.5	>0.1
S. total protein (g/dl)	A (n=30)	Q.S.	7.15 ± 0.07	7.08 ± 0.06	0.06±0.18	0.84↓	0.75	>0.1
	B (n=20)	Q.S.	7.32 ± 0.08	7.28 ± 0.08	0.04±0.08	0.55↓	0.50	>0.1

Blood Urea (mg/dl)	A (n=30)	Q.S.	21.23±1.03	20.63±0.80	0.60±0.94	2.83↓	0.64	>0.1
	B (n=20)	Q.S.	20.65±1.35	20.55±1.30	0.10±1.05	0.48↓	0.09	>0.1

↓ = Decrease ↑ = Increase

Table – 4: Chief complaints wise distribution of 50 patients of Kshudra Kustha

Chief Complaints	No. of Patients		Total	%
	Group A	Group B		
Kandu (itching)	27	18	45	90.00
Vaivarnya (discolouration)	23	14	37	74.00
Srava (discharge)	19	08	27	54.00
Daha (burning sensation)	14	09	23	46.00
Matsya Saklopam (scaling)	14	01	15	30.00
Shoola (pain)	06	08	14	28.00
Pidika (Papillae)	06	03	09	18.00
Avadarana (crack)	02	07	09	18.00

Table – 5: Comparative Effect of test and standard drugs on improvement of symptoms in 50 patients of Kshudra Kustha

Symptoms	Group	Improvement (%)			
		100 – 75	74 – 50	49 – 25	<25
Kandu	A	81.48	18.52	00.00	00.00
	B	83.33	16.67	00.00	00.00
Vaivarnya	A	26.09	73.91	00.00	00.00
	B	42.86	50.00	00.00	07.14
Srava	A	84.21	15.79	00.00	00.00
	B	75.00	12.50	00.00	12.50
Daha	A	78.57	21.43	00.00	00.00
	B	77.78	11.11	11.11	00.00
Matsya Saklopam	A	78.57	21.43	00.00	00.00
	B	00.00	100	00.00	00.00
Shoola	A	83.33	16.67	00.00	00.00
	B	87.50	00.00	00.00	12.50
Pidika	A	66.67	16.67	00.00	16.67
	B	100	00.00	00.00	00.00
Avadarana	A	50.00	50.00	00.00	00.00
	B	28.57	71.43	00.00	00.00

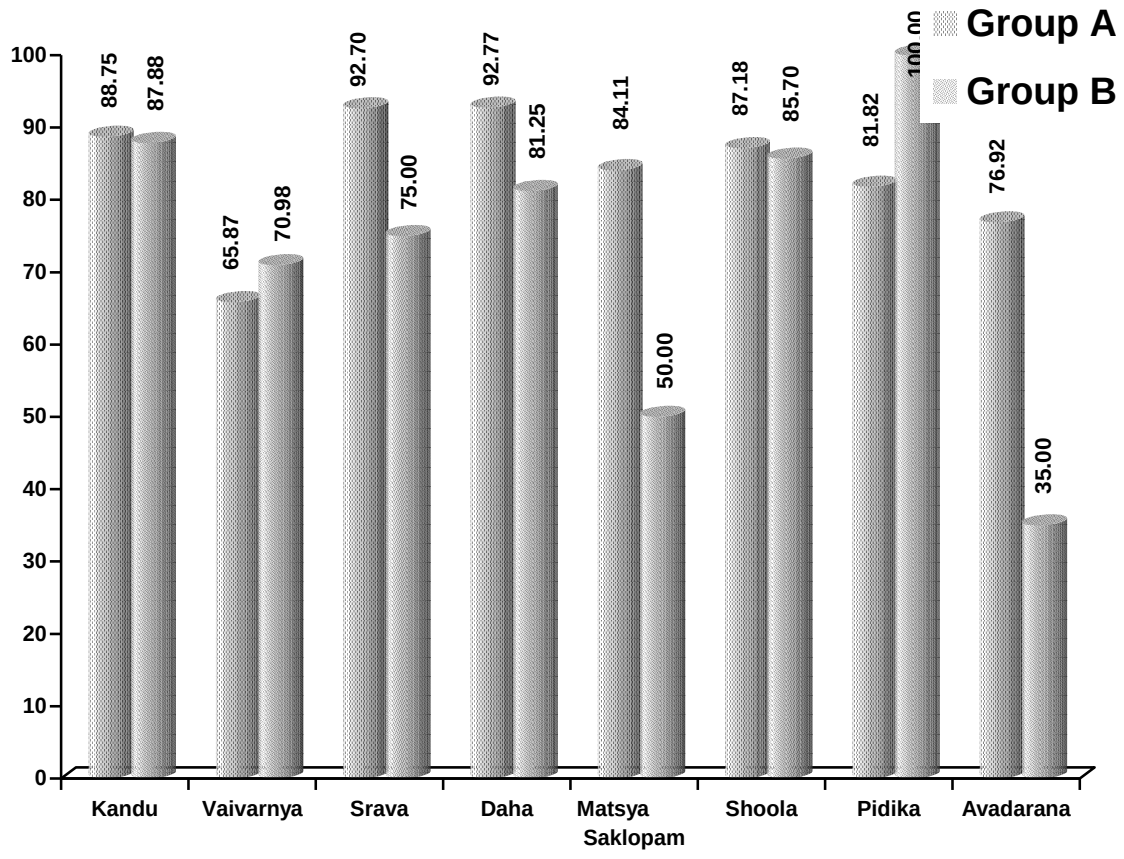
Published online in http://ijam.co.in
ISSN: 0976-5921
International Journal of Ayurvedic Medicine, 2011, 2(2), 81-92

Table – 6: Comparative effect of test and standard drugs on improvement in general symptoms in the patients of Kshudra Kustha

Group	'n'	Dose	Improvement Mean ± SEM	't'	P
Kandu					
A	30	Q.S.	2.13 ± 0.18↓	2.53	<0.05*
B	20	Q.S.	1.45 ± 0.20↓	-	-
Vaivarnya					
A	30	Q.S.	1.10 ± 0.14 ↓	0.00	>0.1
B	20	Q.S.	1.10 ± 0.22 ↓	-	-
Srava					
A	30	Q.S.	1.27 ± 0.20 ↓	2.31	<0.05*
B	20	Q.S.	0.60 ± 0.21↓	-	-
Daha					
A	30	Q.S.	0.77 ± 0.16 ↓	0.50	>0.1
B	20	Q.S.	0.65 ± 0.18 ↓	-	-

* = Significant** = Highly significant ↓ = Decrease ↑ = Increase

Graph - 1: Graph shows the effect of both drug in chief symptoms



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