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Experimental evaluation of *Deepana* and *Pachana* Activity of *Chitraka Kwatha* w.s.r. to different Reduction Criteria

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ABSTRACT

Kashaya Kalpana, also called as *Kwatha Kalpana* is the third one among the *Kashaya Kalpana*. It is prepared by boiling the drug in water and reducing it to specific quantity. Different authors have explained different ratio for drug and water and the quantity of reduction also differs according to the purpose used. Acharya Harita and Bhoja have explained *Kwatha* according to the ratio of reduction and attributed different therapeutic properties according to the ratio of reduction. As per Harita, although the drug and quantity of water used are same for the preparation of *Kwatha*, if the reduction is different, each reduction will have different therapeutic actions and can be used for different disease conditions. Among the seven types of *Kwatha* 1/10th reduction and ½ reduction are said to be having *Deepana* and *Pachana* action respectively. The *Deepana* and *Pachana* action was assessed experimentally in albino rats by adopting some modern parameters. These parameters were logically selected by keeping the modern explanation of digestion and metabolism in mind. When the data obtained by above study is analysed, suggestive of moderate to good effect of *Pachana* and mild to moderate *Deepana* action is noted.

Key words: *Deepana Kwatha*, *Pachana Kwatha*, *Chitraka*, *Plumbago zeylanica*.

INTRODUCTION

Man has been using the drugs as a cure for his diseases since prehistoric period. From *Samhita* period, the drugs were converted into different dosage forms and these preparations were named as *Panchavidha Kashaya Kalpana*.^[1] *Kalpana* word is used by *Acharya Charaka*.^[2]

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Kashaya Kalpana, also called as *Kwatha Kalpana* is the third one among the *Kashaya Kalpana*. It is prepared by boiling the drug in water and reducing it to specific quantity. Different authors have explained different ratio for drug and water and the quantity of reduction also differs according to the purpose used.

Acharya Harita and Bhoja have explained *Kwatha* according to the ratio of reduction and attributed different therapeutic properties to each *Kwatha*. As per Harita, although the drug and quantity of water used are same for the preparation of *Kwatha*, if the reduction is different, each reduction will have different therapeutic actions and can be used for different disease conditions. Among the seven types of *Kwatha* 1/10th reduction and ½ reduction are said to be having *Deepana* and *Pachana* action respectively.^[3] The seven types of *Kwatha* explained by *Acharya* Harita are enlisted below.^[4]

Table 1: Types of Kwatha explained by Harita.

Reduction	Therapeutic action
½	<i>Pachana</i>
1/12 th	<i>Shodhana</i>
1/4 th	<i>Kledana</i>
1/8 th	<i>Shamana</i>
1/10 th	<i>Deepana</i>
Just boiled	<i>Tarpana</i>
1/16 th	<i>Shoshana</i>

Initially, the study was planned by taking *Chitraka* and preparing *Deepana* and *Pachana Kwatha* according to *Harita Samhita*. But, as *Deepana* and *Pachana* action are expected to be exhibited in both the *Kwatha*, one more *Kwatha* is taken for the study, which does not fall under any of the seven types of *Kwatha*. Thus, in the present study, the *Deepana Kwatha* (1/10th reduction), *Pachana Kwatha* (1/2 reduction) are compared with that of the *Kwatha* prepared by the 3/4th reduction in terms of analytical and experimental parameters.

MATERIALS AND METHODS

Experimental study

Source of the study - The study was conducted at, SDM Centre for Research in Ayurveda and Allied Sciences, Udupi.

Aim of the experiment - To study the *Deepana* and *Pachana* action of *Chitraka Kwatha* when it is reduced to different reductions.

Materials

- Animal- 24 Wistar albino rats
- Metabolic cage-24 in number
- Measuring glass
- 2ml syringe
- Infant feeding tube
- Weighing machine.

Selection of Animals

Inclusion criteria

Healthy adult albino rats of either sex weighing 150-200g.

Exclusion criteria

- Diseased rats, pregnant rats and rats subjected to other experiments.
- Rats below 150g and above 200g body weight.

Ethical Clearance - The experiments were conducted after obtaining the permission from the Institute's Animal Ethics Committee (SDMCAU, IAEC, 2012-13-BK 01).

Grouping and Intervention

The rats were weighed and grouped as follows;

Table 2: Grouping of experimental study

Group	No. of rats	Drug
Control	6	Normal water
Test 1	6	<i>Chitraka Kwatha</i> prepared by 3/4 th reduction
Test 2	6	<i>Chitraka Kwatha</i> prepared by 1/10 th reduction
Test 3	6	<i>Chitraka Kwatha</i> prepared by 1/2 reduction

Mode of drug administration

Chitraka Kwatha is prepared from the coarse powder of the dry drug. 20g of the powder was added with 160ml of water in a vessel, boiled and reduced to 3/4th, 1/10th and ½ for group 2, group 3 and group 4 respectively. The *Kwatha* is administered orally for each rat according to dose conversion formula using the syringe and infant feeding tube.

Dose

The human dose of *Chitraka Kwatha* is 2 Pala^[5] (96ml) which was converted into rat dose using standard dose converting formula (Paget and Barnes-1964).

Formula

Human dose x Body surface area constant of the rat x 5

= H. Dose x 0.018 x 5 / kg body weight

= 96 ml x 0.018 x 5/ kg body weight

= 8.64ml/ kg body weight

Duration of the study: 15 days

Experimental procedure

Each rat from four groups was kept in separate metabolic cages with constant amount of water and food per day. To each rat, 200ml water and 50g food were provided in the food hopper and bottle holder per day. After 24 hours, the amount of water and food remaining in the respective holders were measured to obtain the quantity of water and food consumed per day. Simultaneously, the quantity of stool and urine collected from the rats were also measured. This was recorded initially for consecutive 5 days without administering the drug to the rats to obtain baseline data of each rat. Sixth day onwards, the drug was administered and the same procedure was repeated for 10 more days. Quantity of stool and urine were measured every day. On the 1st, 10th and 15th day, the weight of each rat from all the groups was also noted.

Determination of *Deepana-Pachana* effect of the drug was done on the basis of consumption of food and water, quantity of faecal matter and urine and the food conversion ratio. *Chitraka Kwatha* prepared by different reduction methods were administered orally in prescribed dose to six albino rats of test groups and normal water was administered to the control group for 15 days. The total consumption of food and water in the test group was calculated and was compared with the control and test groups. Total quantity of faecal matter and urine in the test group was measured and compared with the control and test groups. Food conversion ratio was calculated and was compared with the control and test groups. The body weight of each rat was also recorded at the end of the experiment and was compared with the initial body weight. After the completion of the experiment, the dried samples of faecal matter of the rats were subjected to analysis for the presence of total Fat and total Protein and the values of the test groups are compared with the control group.

STATISTICAL ANALYSIS

All the values were expressed as mean \pm SEM (Standard Error of Mean). The data was analysed by ANOVA for between the groups with Dunnet's Multiple 't' as post hoc test. The data was analysed by paired 't' test for within the groups. A level of $p < 0.05$ was considered as statistically significant. Level of significance was noted interpreted accordingly.

RESULTS AND OBSERVATIONS

Table 3: Effect of *Chitraka Kwatha* on food consumption with data presented in absolute values.

Group	Food consumption in grams (absolute values)			
	Preliminary phase Mean \pm SEM	% change	Therapeutic phase Mean \pm SEM	% change
Control	11.34 \pm 0.66	-	12.11 \pm 0.90	-
Test 1 (<i>Chitraka Kwatha</i> 3/4 th reduction)	11.96 \pm 1.16	3.79 \downarrow	11.65 \pm 1.02	3.79 \downarrow
Test 2 (<i>Chitraka Kwatha</i> 1/10 th reduction)	10.43 \pm 0.78	8.02 \downarrow	11.29 \pm 0.57	6.77 \downarrow
Test 3 (<i>Chitraka Kwatha</i> 1/2 reduction)	9.28 \pm 0.55	18.16 \downarrow	9.51 \pm 0.26	21.47 \downarrow

The data related to the effect of test formulation on food consumptions have been summarized in the table 3.

The food consumption was slightly less in test 1, test 2 and test 3 groups during preliminary phase when compared to control group preliminary phase. The food consumption was found to be marginally

increased in control, test 2 and test 3 groups during therapeutic phase in comparison to the preliminary phase. The increase was found to be statistically significant.

Food consumption during therapeutic phase was decreased in test 1, test 2 and test 3 groups when compared with control group therapeutic phase. However the changes observed in all 3 groups were not statistically significant.

- Effect of *Chitraka Kwatha* on food consumption with data presented in terms of relative values was not statistically significant.
- Effect of *Chitraka Kwatha* on water intake in rats with data presented in absolute values was not statistically significant.
- Effect of *Chitraka Kwatha* on water intake in rats with data presented in terms of relative values was not statistically significant.
- Effect of *Chitraka Kwatha* on urine output in rats with data presented in absolute values was not statistically significant.
- Effect of *Chitraka Kwatha* on urine output in rats with data presented in terms of relative values:

Table 4: Effect of test formulation on urine output

Group	Urine output in ml/100g body weight			
	Preliminary phase Mean ± SEM	% change	Therapeutic phase Mean ±SEM	% change
Control	1.44 ±0.28	-	0.68± 0.12#	-
Test 1 (chitraka kwatha 3/4th reduction)	1.84± 0.65	27.7↑	0.94 ±0.23	38.23↑
Test 2 (chitraka kwatha 1/10th reduction)	1.78 ±0.62	23.6↑	0.91 ±0.26	33.82↑

Test 3(chitraka kwatha 1/2 reduction)	1.39± 0.39	3.47 ↓	1.90 ±0.37*#	179.41↑
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*p< 0.05- (compared with control), # p<0.05 (compared with preliminary phase)

The data related to the effect of test formulation on urine output have been summarized in table 4.

There was increase in urine output in test 1 and test 2 groups during preliminary phase when compared to control group preliminary phase. But the observed increase was not statistically significant. There was decrease in urine output in test 3 group during preliminary phase when compared to control group preliminary phase. But the observed decrease was not statistically significant.

There was significant decrease in urine output in control group during therapeutic phase when compared to its preliminary phase. There was increase in urine output in test 1 and test 2 groups during therapeutic phase when compared to control group therapeutic phase. But the observed increase was not statistically significant. There was significant increase in urine output in test 3 group during therapeutic phase when compared to control group therapeutic phase.

Table 5: Effect of *Chitraka Kwatha* on faecal weight (wet) in rats with data presented in absolute values

Group	Faecal weight (wet) in grams (absolute value)			
	Preliminary phase Mean± SEM	% change	Therapeutic phase Mean± SEM	% change
Control	3.16+/_0.39	-	3.56± 0.32	-
Test 1 (<i>Chitraka Kwatha</i> 3/4th reduction)	3.26±0.39	3.16↑	3.42 ± 0.32	3.93↓
Test 2 (<i>Chitraka</i>	2.61±0.17	17.40↓	3.26± 0.23#	8.42↓

Kwatha 1/10th reduction)				
Test 3 (Chitraka Kwatha 1/2 reduction)	2.26 ±0.20	28.48↓	2.90±0.18##	18.53↓
# p<0.05, ##p<0.01(compared with preliminary phase)				

The data related to the effect of test formulation on faecal weight (wet) have been summarized in the table 5.

There was increase in faecal weight (wet) test 1 group during preliminary phase when compared to control group preliminary phase. But the observed increase was not statistically significant. There was decrease in faecal weight (wet) in test 2 and test 3 groups during preliminary phase when compared to control group preliminary phase. But the observed decrease was not statistically significant.

There was decrease in faecal weight (wet) in test 1 group during therapeutic phase when compared to control group therapeutic phase. But the observed decrease was not statistically significant. There was significant decrease in faecal weight (wet) in test 2 and test 3 groups during therapeutic phase when compared to their preliminary phase.

Table 6: Effect of Chitraka Kwatha on faecal weight (wet) in rats with data presented in terms of relative values.

Group	Faecal weight (wet) in g/100g body weight			
	Preliminary phase Mean ± SEM	% change	Therapeutic phase Mean ± SEM	% change
Control	1.62± 0.24	-	1.49±0.07	-
Test 1 (Chitraka Kwatha 3/4th	1.46 ±0.12	9.87 ↓	1.60± 0.12	7.38 ↑

reduction)				
Test 2 (Chitraka Kwatha 1/10th reduction)	0.24± 0.05	85.18↓	1.47±0.02##	1.34↓
Test 3 (Chitraka Kwatha 1/2 reduction)	1.40 ±0.10	13.58↓	1.78±0.08##	19.64↑
##p<0.01(compared with preliminary phase)				

The data related to the effect of test formulation on faecal weight (wet) have been summarized in the table 6.

There was decrease in faecal weight (wet) in test 1, test 2 and test 3 groups during preliminary phase when compared to control group preliminary phase. But the observed decrease was not statistically significant.

There was increase in faecal weight (wet) in test 1 group during therapeutic phase when compared to control group therapeutic phase. But the observed increase was not statistically significant. There was significant decrease in faecal weight (wet) in test 2 groups during therapeutic phase when compared to its preliminary phase. There was significant increase in faecal weight (wet) in test 3 group during therapeutic phase when compared to its preliminary phase.

Table 7: Effect of Chitraka Kwatha on faecal weight (dry) in rats with data presented in absolute values

Group	Faecal weight (dry) in g (absolute value)			
	Preliminary phase Mean ±SEM	% change	Therapeutic phase Mean ±SEM	% change
Control	2.71± 0.40	-	2.63 ± 0.19	-
Test 1 (Chitraka Kwatha	2.58 ±0.31	4.79 ↓	2.65 ± 0.22	0.76 ↑

3/4th reduction)				
Test 2 (Chitraka Kwatha 1/10th reduction)	2.17± 0.15	19.9↓	2.55± 0.14#	3.04 ↓
Test 3 (Chitraka Kwatha 1/2 reduction)	1.79 ± 0.11	33.9↓	2.12 ± 0.10#	19.4↓
# p<0.05 (compared with preliminary phase)				

The data related to the effect of test formulation on faecal weight (dry) have been summarized in table 7.

There was decrease in faecal weight (dry) in test 1, test 2 and test 3 groups during preliminary phase when compared to control group preliminary phase. But the observed decrease was not statistically significant.

There was marginal increase in faecal weight (dry) in test 1 group during therapeutic phase when compared to control group therapeutic phase. But the observed increase was not statistically significant. There was significant increase in faecal weight (dry) in test 2 and test 3 groups during therapeutic phase when compared to their preliminary phase.

Table 8: Effect of Chitraka Kwatha on faecal weight (dry) in rats with data presented in terms of relative values.

Group	Fecal weight (dry) in g/100g body weight			
	Preliminary phase Mean± SEM	% change	Therapeutic phase Mean± SEM	% change
Control	1.39 ± 0.21	-	1.19 ± 0.05	-
Test 1 (Chitraka Kwatha	1.15 ± 0.09	17.26↓	1.25 ± 0.10	5.04↑

3/4th reduction)				
Test 2 (Chitraka Kwatha 1/10th reduction)	1.03± 0.04	25.89↓	1.17 ±0.02#	1.68 ↓
Test 3 (Chitraka Kwatha 1/2 reduction)	1.10 ± 0.07	20.86↓	1.30 ±0.06#	9.24 ↑
# p<0.05 (compared with preliminary phase)				

The data related to the effect of test formulation on relative faecal weight (dry) have been summarized in table 8.

There was decrease in relative dry faecal weight in test 1, test 2 and test 3 groups during preliminary phase when compared to control group preliminary phase. But the observed decrease was not statistically significant.

There was only a marginal increase in relative faecal weight (dry) in test 1 group during therapeutic phase when compared to control group therapeutic phase. But the observed increase was not statistically significant. There was significant increase in relative faecal weight (dry) in test 2 group during therapeutic phase when compared to its preliminary phase. There was significant increase in faecal weight (dry) in test 3 group during therapeutic phase when compared to its preliminary phase.

- Effect of *Chitraka Kwatha* food conversion ratio in rats with data presented in absolute values was not statistically significant.
- Effect of *Chitraka Kwatha* on food conversion ratio in rats with data presented in terms of relative values was not statistically significant.
- Effect of *Chitraka Kwatha* on body weight of rats was not statistically significant.

Parameters assessed for dried faecal matter of Rats.**Results****Table 9: Effect of Chitraka kwatha on Total Fat in dried faeces with the data presented**

Name of the parameter	Control	Test 1 CK 3/4 th reduction	Test 2 CK 1/10 th reduction	Test 3 CK ½ reduction
Total Fat	4.271	3.209	2.907	1.710

The data related to the effect of test formulation on total Fat in dried faeces of rats have been summarized in table 9.

The amount of fat in faecal matter indicates the non-metabolised fat of the consumed food. When the above values are analysed, it is observed that the total fat value is in increasing order in test 3, test 2, test 1 and control groups. These values were less when compared with the control group. The less fat value in faeces indicates more amount of metabolised fat when compared with the control group. Hence, it may be interfered as the test 3 group (*Kwatha* prepared by 1/10th reduction) has more effect on the metabolism of fat than the other two test groups.

Table 10: Effect of Chitraka Kwatha on Total Protein in dried faeces with the data presented.

Name of the parameter	Control	Test 1 CK 3/4 th reduction	Test 2 CK 1/10 th reduction	Test 3 CK ½ reduction
Total Protein	5.232	4.212	6.560	4.657

The data related to the effect of test formulation on Total Protein in dried faeces of rats have been summarized in table 10.

The total amount of protein in faecal matter indicates the non-metabolised protein of the consumed food. When the above values are analysed, it is observed that the total protein is decreased in test 1 and test 3 groups and was increased in test 2 group when compared with the control group. It may be inferred as the test 1 and test 3 groups have metabolised more amount of protein and test 2 group have metabolised

less amount of protein when compared with the control group.

DISCUSSION

The main aim of the study is to evaluate the *Deepana* and *Pachana* effects of *Kwatha Kalpana* when it is reduced to specific reductions as it is said in *Harita Samhita*. To study this, a well known *Deepana-Pachana* drug i.e. *Chitraka* is selected so that it is possible to observe the changes in animals when the *Deepana* and *Pachana Kwatha* are administered separately. To compare this result with the ratio which has not been mentioned in the context, drug control group i.e. 3/4th reduction is included in the study. 24 Wistar albino rats of either sex weighing between 150-200g were selected for the study. They were separated into 4 groups and each rat was housed individually in metabolic cages in well-ventilated room. The rats were kept under observation for five days with standard laboratory diet. During the acclimatization period the weight of the rat and per day consumption of food and water were monitored. After which they were examined for their normal health and then subjected to experimental study. The *Chitraka Kwatha* is administered orally for each rat according to dose conversion formula.

The criteria which are considered for the assessment are as follows.

- Determination of *Deepana* activity is done on the basis of quantity of food consumed and by the quantity of faecal matter and urine collected from the rats.
- *Pachana* action is ascertained on the basis of calculation of food conversion ratio. (Food consumed / Faecal expulsion).
- Increase in food consumption without increase in the food conversion ratio is considered as *Deepana* effect and increase in food conversion ratio is considered as *Pachana* effect.

Food intake

The food intake has to be considered with respect to two aspects - one the status of food intake during

therapeutic phase in comparison to the base line values recorded during drug free preliminary phase.

However, moderate difference were observed among the test drug administered groups. Comparatively higher food consumption was observed with respect to both absolute and relative values in *Chitraka Kwatha* prepared by 1/2 reduction .

The dose was fixed based on the body weight of the animals and not after examining *Prakriti* of the animals. Increase in food intake was seen in both *Pachana* and drug control group indicating the drug control group i.e. nothing but where 3/4th reduction level which was considered to be a non reduction level for assessing the *Deepana* or *Pachana* effect. This suggests that an elaborative further research work may be taken by taking a non *Deepana Pachana* drug by preparing its *Kwatha* and reducing to 1/10th for assessing *Deepana* action or ½ for assessing *Pachana* action. But in *Pachana* group i.e. where *Kwatha* is reduced ½ has shown better *Deepana* activity which is shown by increase of food intake. As per the definition of *Pachana*, all *Pachana* drugs will also act as *Agnideepaka* drugs, that is elicited in this *Pachana* group by showing increase in food intake.

Faecal weight (wet)

Absolute value: In comparison to the absolute values of control groups, there was decrease seen in wet faecal weight in all the 3 groups compared with control group and it was significant in *Deepana* and *Pachana* group. However, the comparison between therapeutic phase values with preliminary phase values provide insight in to the nature of the effect. In control group as well as test group an apparent increase in absolute fecal output was observed. However, the highest increase was found to be in *Chitraka Kwatha* prepared by 1/10th reduction treated group followed by *Chitraka Kwatha* prepared by 1/2 reduction treated group.

Relative value: In control group the relative faecal output was found to be moderately decreased during therapeutic phase in comparison to the preliminary phase.

Faecal weight (dry): The activity pattern with respect to faecal dry weight was also similar to the one observed with wet weight.

Faeces is the byproduct of metabolism. If the food gets digested and metabolised properly, the byproduct i.e. faeces will be less. The decrease in quantity of faecal matter indicates the digestion has occurred and thus metabolic wastes are formed less i.e. faecal matter is decreased in amount. This in turn signifies the *Pachana* effect of the drug in all the 3 groups. Increased fecal expulsion is indicative of decrease in the *Pachana* effect of the drug. In this study, *Chitraka Kwatha* prepared by 1/2 reduction was found to be more effective.

Food conversion ratio

This can be considered as the most important parameter for assessing the *Deepana* and *Pachana* property in a test drug.

Absolute value: A moderate decrease in absolute value based food conversion ratio was observed in control, test 2 and marginal decrease in test 3 group, when the values of the therapeutic phase were compared to preliminary phase.

Relative value: There is moderate increase in relative value based food conversion ratio in rats in test 1 and test 3 groups during therapeutic phase, when compared to control group therapeutic phase. In test 2 group, only a marginal increase is observed. However, the inference is to be based on comparison of the therapeutic value with those of preliminary baseline values. In this context decreased food conversion ratio was observed in all the groups during therapeutic phase in comparison to the preliminary phase. This indicates the influence of external influences.

Body weight of rats

An increase in body weight was observed in all the 4 groups when compared with their initial body weight and it was marginally increased in *Deepana* group. However, the increase was comparatively less in *Chitraka Kwatha* prepared by 1/2 reduction group - indicative diminished *Brumhana* effect. As per

Charaka, *Chitraka* is one of the drug in *Lekhaniya Dashemani*. That may be the reason for not increase of significant body weight in all the groups, except *Deepana* group.

Water intake

Absolute value: Water is very much essential for digestion of food. Increase in water intake was seen in *Deepana* group indicating the requirement of water for better digestion and absorption of food.

Relative value: An increase was seen in water intake in both drug control and *Deepana* group indicating *Deepana* action of *Chitraka Kwatha* in this reduction.

Urine output

Absolute value: An increase was seen in urine output in all the 3 groups compared with control group.

Relative value: There was increase seen in all the 3 groups compared with control group. This indicates the drug irrespective of the reduction has *Deepana* effect in the experimental animals. This may be because the drug *Chitraka* is known for its *Deepana* action, but enhanced *Deepana* action of the same drug at 1/10th reduction level can be better elicited when it is compared with a non-*Deepana* *Pachana* drug at the particular reduction level i.e. 1/10th.

CONCLUSION

Acharya Harita and Bhoja have explained the actions of *Kwatha* according to the different reduction level as 1/10th reduction - *Deepana Kwatha*, ½ reduction - *Pachana Kwatha* etc. *Deepana Dravyas* mainly exhibit dominance of *Tikshna Guna* and by the effect of same only they will increase the *Tikshna Guna* of *Agni* and *Pachana Dravyas* exhibit *Ushna Guna* in predominance by which, they may help to do *Pachana Karma*. The difference between *Deepana* and *Pachana* may be because of the amount of variation in *Agneya guna*. In experimental study, in control group as well as test groups, an apparent increase in absolute faecal output was observed. However, the highest increase was found in *Chitraka Kwatha* prepared by 1/10th reduction treated group followed by *Chitraka Kwatha* prepared by 1/2 reduction treated group. The increase in the body weight was

comparatively less in *Chitraka Kwatha* prepared by 1/2 reduction group compared to other groups. When the values of water intake were analyzed, a moderate increase was seen in test groups administered with *Kwatha* of 1/10th and ½ reduction level. A significantly better *Deepana* and *Pachana* action is observed in *Kwatha* prepared by ½ reduction group, when the rat faeces sample is subjected for the estimation of fats and protein. When the data obtained by above study is analysed, suggestive of moderate to good effect of *Pachana* and mild to moderate *Deepana* action is noted. The concepts like *Ama*, *Agnimandya* and *Agni* were difficult to assess in albino rats, because these are such concepts which are well designed and explained by keeping human beings in mind. So, adaptation and assesment of such Ayurvedic concepts in albino rats was difficult. Still, some modern parameters were selected, experimentally designed, adopted and assesed in albino rats. These parameters were logically selected by keeping the modern explanation of digestion and metabolism in mind. So, these parameters no where exactly equal to the parameters explained in Ayurveda for the assesment of *deepana* and *pachana* action. Here, an attempt is made to revalidate the concept of *Deepana* and *Pachana* as explained by Harita.

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