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Study of *Aushadh Sevan Kala* in *Kaphaja Kasa Vyadhi* using *Nagaradi Yoga* w.s.r. to *Grasantar Kala*

Sagar V. Ital,[1] Kiran V. Pawar,[2] Apeksha D. Patil,[3] Dhiraj B. Patil.[4]

[1]*Assistant Professor, Department of Samhita Siddhanta,* [2]*Assistant Professor, Department of Swasthavritta,* [3]*Assistant Professor, Department of Rasashastra & Bhaishajya Kalpana,* [4]*Assistant Professor, Department of Agada Tantra, Matoshri Asarabai Darade Ayurved College, Babhulgaon, Nashik, Maharashtra, India.*

A B S T R A C T

The present study entitled 'Study of *Aushadha Sevana Kala* in *Kaphaj Kasa Vyadhi* using *Nagaradi Yoga* with special reference to *'Grasantar Kala'*. Here Clinical study regarding *"Kaphaj Kasa"* Vyadhi was carried with the help of *"Nagaradi Yoga"* administered in *Grasantar Kala* in Group A and at *Adhobhakta Kala* in Group B 32 patients in each group have been studied with treatment and follow up after each 3 days upto 15 days. Clinical assessment of the patients was done by using criteria regarding *Kasa* included parameter like no. of *Kasa Vega, Kapha Nishtivana, Aruchi, Agnimandya, Chhardi, Utklesha, Gaurava* and *Peenas.* Assessment was done on the basis of scoring pattern designed for them. *Asyamadhurya, Kaphapurna Deha, Praliptata, Sashakta Vaishamya* and *Lomharsha* was not observed in any of the patients in this study in any of the group. As data was not available on the above said symptoms, statistical analysis of the symptoms is not needful. When drug was administered at *Grasantara Kala* more percentage of improvement is observed regarding almost all parameters showed in observation and results. So, it can be statistically concluded that drug administered in *Grasantara Bheshaj Kala* i.e. 95.84% shows maximum result in *Kaphaja Kasa Vyadhi* than *Adhobhakta Kala* i.e. 82.51%.

Key words: *Aushadh Sevan Kala, Nagaradi Yoga, Kaphaja Kasa Vyadhi.*

INTRODUCTION

Life is a mix bag of wholesome and unwholesome, happy and sorrowful experiences which form basis for the health and disease in a man.

Ayurveda addresses the measures for protection of the health of healthy person and eliminating disease. During due course of time Ayurveda became science

Address for correspondence:

Dr. Sagar V. Ital
Assistant Professor, Department of Samhita Siddhanta,
Matoshri Asarabai Darade Ayurved College, Babhulgaon, Nashik,
Maharashtra, India.
E-mail: dran1221@gmail.com

of life. It has its root in ancient vedic literature and encompasses our entire life, body, mind and spirit.

Kala is *'Bhagavan'* having neither a beginning nor an end. Along with fourth *Pada* of *Chikitsa Chatuspada* i.e. *Bheshaja* (drug), *Kala* or administration of drug is also emphasized. Hence, *Kala* is co-operative elevator of the *Bheshaja*. This becomes an important cause to study the *Aushadh Sevana Kala*.

Shamana subdues *Doshas* at their own places. These *Aushadha Sevana Kalas* are explained for *Shamana* type of treatment. *Aushadha Sevana Kalas* impacts on efficacy of drug. Drug exhibit different action when administered in different *Aushadh Sevan Kalas*. This important nature of *Kala* influenced in the selection of subject *Aushadh Sevana Kala* for the study. *Aushadh Sevana Kalas* varies in the names and number as per *Samhita*. Amongst this *Grasantara Aushadh Sevana Kala* is selected for clinical study.

To subside this problem, medicine was administered

in *Grasantar Aushadha Sevana Kala* as drug of choice *Nagara, Pippali* and *Guda Yoga* in *Kasa Vikara.*

Thus, hypothesis is made as Administration of drugs at *Grasantara Kala* exhibits better result in *Kasa Vyadhi* in comparison with *Adhobhakta Kala.*

OBJECTIVES

1. To study the *Aushadh Sevana Kala* in *Kaphaja Kasa Vyadhi* using *Nagaradi Yoga* with special reference to *Grasantara Kala.*

2. To study the specificity of *Aushadha Sevana Kala* and study of *Prana Vayu* in the management of the *Kaphaja Kasa Vyadhi.*

REVIEW OF LITERATURE

Caraka Samhita's Ausadhaveksa Kala

Acarya Caraka explained the *Ausadhaveksa Kala* are ten in number.[1] *Pratah Niranna Kala* is specified by *Caraka*. It is considered by *Cakrapani* into the *Bhuktadau Kala*. The *Bhuktadau Kala* has been split by *Cakrapani* into two *Pratah Bhuktadau Kala* and merely *Bhuktadau Kala.* Taking into consideration the physiology of *Sharira* which is different with respect to *Vata*, activated at both *Pratah Bhuktapaschat Kala* and *Sayam Bhuktapaschat Kala* it has been specified as two separate *Kala,* realigning the *Aushadha Kala* to ten. If we observed the exact *Kala* of administration of *Antarabhakta Kala,* as per the commentators, it is *Madhyanha*; which could be included into the *Dinaveksa Kala* of *Charaka*. Same is true for the *Nisha Kala* which is also a component of the *Dinaveksa Kala.*

Grasantara Kala[2],[3]

SN	*Vyadhi*	*Vikruti*
1.	*Kasa*	
2.	*Shwasa*	
3.	*Hikka*	*Prana Vayu*
4.	*Pipasa*	*Vikruti*
5.	*Cchardi*	
6.	*Visha Vikara*	

All above mentioned *Vyadhi* are Life threatening diseases. One should pay immediate and continuous attention regarding the *Chikitsa* of above stated *Vyadhi. Grasantara Kala* provides medicine administered between two morsels of food. Therefore, it is useful for administration of *Aushadha* in the above mentioned *Kasadi Vyadhi*. In this *Kala, Churna* is employed in *Durbala Agni* for *Deepanartha*. Also, *Kashyapa* opines that this *Kala* can be used for administration of *Aushadha* for *Ksheen Shukra, Alpa Shukra, Vajikarana* and for the purpose of *Agnivardana*.

KASA

Bhedha

Authors of *Caraka, Sushruta, Vagbhata, Bhavapraksha, Sharangadhara, Yogaratnakara, Madhava Nidana* mentioned *Kasa* as five types. They are as follows,

1. *Vataja Kasa*

2. *Pittaja Kasa*

3. *Kaphaja Kasa*

4. *Kshataja Kasa*

5. *Kshayaja Kasa*

Nidana of Kasa

In *Kasa*, cordial relationship between *Prana* and *Udana Vayu* is very much necessary in *Kantha* for normal functions of speech deglutination etc. As the *Pranavaha Srotas* is directly related with the external environment through the nose and mouth, it is more prone for allergens and droplet infections. Factors like air pollution due to heavy traffic, dust and urbanization leads to the manifestation of *Kasa*. Immunity factor and *Deha Prakriti* is responsible for disease manifestation, which is influenced by *Nidanakara* factors.

Poorvarupa

Poorvarupa are those Signs and Symptoms which appear earlier to the actual disease. They manifest during the stage of *Dosha Dooshya Sammurchana.*

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Rupa

The actual Signs and Symptoms of the disease will be seen in the *Vyakta Avastha* where *Dosha Dooshya Sammoorchana* takes place. With the help of *Rupa*, a disease can be diagnosed and confirmed. The *Samprapti Ghatakas* can be studied with the help of *Rupa* only. *Samanya Rupa* of *Kasa* is not given in any *Samhita*.

Samprapti of Kasa

Vayu impeded from below moves to the upper channels, attains character of *Udana Vayu* and sticks in throat and chest. Further it advances to all the orifices of head and them produces breaking pain and jerking in the whole body particularly causing strain and stiffness in jaws, carotid region, orbits, eye balls, back, chest and sides. Thus dry or phlegmy cough arises. "*Kasa*" is so called because of producing the above movements and affliction.

MATERIAL AND METHODS

The present study was a clinical trial to access the role of *Grasantara Aushadha Sevana Kala* in the management of *Kaphaja Kasa* by using *Nagaradi Yoga*.

Source and Preparation

1. *Nagaradi Yoga* content (*Nagar, Pippli, Guda*) were taken from Ayurvedic pharmacy of concerned college and local market.
2. *Nagaradi Yoga* was prepared by mixing in equal quantity of dried fruits of *Nagara* and *Pippali* and old *Guda* by making *churna.*

Authentication and Standardization Of *Nagaradi Yoga*

Authentication and Standardization of *Nagaradi Yoga* (i.e. *Sunthi*, *Pippali* and *Guda*) was done in College of Pharmacy. Standardization was done according to API guidelines.

Herb	Latin name	Part used	Rasa	Virya	Vipak	Guna
Nagara	Zingiber officin ale, Linn.	Kanda	Katu	Ushna	Madhura	Laghu, Snigd ha
Pippali (Dry)	Piper longum, Linn.	Phala	Katu	Anushna - Sheeta	Madhura	Laghu, Snigdha, Tishna
Guda (old) (Jaggery	-	-	Madhura	-	-	Laghu

Sampling

64 patients of *Kaphaja Kasa Vyadhi* were selected in any season.

Sampling units were divided in two groups of 32 Patients in each group.

- The *Ushna, Tikshna, Laghu Guna and Kaphaghna* property of content of *Nagaradi Yoga* required less quantity of dose for treating the specific disease. So, from pilot study, conclude that required dose 1gm during lunch and 1 gm during dinner for this research.

- Administration of *Nagaradi Yoga* was monitored by giving individual guidance to patients how to take the dose.

Group A: 32 patients were treated with *Nagaradi Yoga* at *Grasantar Kala* (i.e. between two morsels of food) in dose of 1 gm during lunch and in dose of 1 gm during dinner by licking pulp of finger up to completion of dose.

Drug	Nagaradi Yoga
Dose	1 gm
Route of administration	Oral
Time of administration	Grasantara
Total duration	15 days
Follow up	3rd, 6th, 9th, 12th, 15th

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Group B: 32 patients were treated with *Nagaradi Yoga* at *Adhobhakta Kala* i.e. drug administration is done after meal in the dose of 1 gm (twice a day)*.*

Drug	*Nagaradi Yoga*
Dose	1 gm
Route of administration	Oral
Time of administration	*Adhobhakta (Vyanodan)*
Total duration	15 days
Follow up	3rd, 6th, 9th, 12th,15th

Place of work

Samhita Siddhant O.P.D. Ayurveda Rugnalaya of concerned college.

Selection of patients

a) Criteria of Inclusion

1. Sex - either

2. Irrespective of occupation and religion.

3. Age - 20 to 60 yrs.

4. Patient having sign and symtoms of *Kaphaj Kasa* as described in *Bruhatrayi* (C.Chi.18/17-19, A.H.Ni.3/26, Su.U.52/10).

5. If patient gets relief before 15 days then treatment was stopped but next follow up were continued till 15 days.

b) Criteria of Exclusion

1. *Garbhini, Sutika.*

2. Any other medical and surgical major illness.

c) Criteria of Withdrawal

1. If patient develops any adverse effects.

2. If not responding to treatment and aggregation of symptoms.

3. Patient refuses to continue the treatment.

4. Drop out replaced according to inclusion criteria.

- **Criteria of Assessment**

a. Inform written and valid consent was taken from patient.

b. Assessment was done from scoring of symptoms in

c. Gradation of *Kasa* according to criteria in i.e. mild+, moderate++, Severe+++

d. If this gradation of symptoms reduced during treatment then;

- From severe to moderate or moderate to mild = 33.33% relief.

- From severe to mild = 66.66% relief.

- From mild or moderate or severe to normal = 100% relief.

Criteria for assessment and scoring of symptoms

1. Frequency of *Kasa* Vega

1.	No *Kasa Vega* /normal	0
2.	*Kasa Vega* 2-3 times in a day	1 (mild) +
3.	*Kasa Vega* 4-7 times in a day	2 (moderate)++
4.	*Kasa Vega* recurrent times in a day	3 (severe) +++

2. *Sthivana*

- **Consistency**

1.	No consistency of *Sthivana*	0
2.	After lot of coughing little *Kapha Sthivan* and i.e. too '*Tanu'*.	1 (mild) +
3.	Not very '*Tanu'*, not very *Ghana* and *Snigdha.*	2 (moderate) ++
4.	Expectorated *Kapha* - totally *Ghana* and *Snigdha*.	3 (severe) +++

- **Quantity**

1.	No quantity of *Kapha* in expectoration	0
2.	A lot of coughing slight *Kapha* was expectorated	1 (mild) +
3.	After each attack of cough slight	2

	Kapha was expectorated	(moderate)++
4.	After each attack of cough, expectorated *Kapha* which is constantly and in excess	3 (severe) +++

3. Pain

▪ **Site**

1.	No pain at any site while coughing	0
2.	Pain at one site while coughing.	1 (mild) +
3.	Pain at two site while coughing	2 (moderate)++
4.	Pain at more than two site while coughing	3 (severe) +++

▪ **Severity**

1.	No severity of pain while coughing	0
2.	After lot of coughing slight pain occur	1 (mild) +
3.	During each attack of cough, there was pain but bearable to patient and do not disturb sleep.	2 (moderate) ++
4.	During each attack of cough, pain in piercing especially in *Parsva*, *Urah*, *Sira* and does not allow to sleep.	3 (severe) +++

4. *Kanthe Kandu* (irritation)

1.	No irritation while coughing	0
2.	Occasionally feeling of irritation after lot of coughing	1 (mild) +
3.	Feeling of irritation of coughing in a day	2 (moderate) ++
4.	Feeling of irritation after each attack of coughing and excess in whole day.	3 (severe) +++

5. *Bhojyanam Avrodhachcha* (obstruction to movement of food)

1.	No obstruction to movement of food	0
2.	Occasionally feeling of obstruction to movement of food	1 (mild) +
3.	Feeling of obstruction to movement of food in a whole day during on and off	2

	cough.	(moderate)++
4.	Feeling of obstruction to movement of food all the day during each attack of cough.	3 (severe) +++

6. *Shukpurna Galasyata* (Feeling of thorn pricking the throat)

1.	No feeling of thorn pricking the throat	0
2.	Occasionally feeling of thorn pricking the throat after lot of coughing	1 (mild) +
3.	Continue feeling of thorn pricking the throat in a day during on and off cough.	2 (moderate)++
4.	Feeling of thorn pricking the throat after each attack of cough and in excess more than a day	3 (severe) +++

7. *Pinasa* (Coryza)

1.	No feeling of *Pinasa*	0
2.	Occasionally feeling of *Pinasa*	1 (mild) +
3.	Feeling of *Pinasa* at any time in a day	2 (moderate)++
4.	Feeling of *Pinasa* all the day	3 (severe) +++

8. *Mandagni* (Loss of appetite)

1.	No feeling of loss of appetite	0
2.	Occasionally feeling of loss of appetite since 1 day	1 (mild) +
3.	Feeling of loss of appetite since 2-3 day	2 (moderate)++
4.	Feeling of loss of appetite more than 3 day	3 (severe) +++

9. *Aruchi* (loss of taste)

1.	No feeling of *Aruchi*	0
2.	Feeling of *Aruchi* since 2-3 days	1 (mild) +
3.	Feeling of *Aruchi* since 3-5 days	2 (moderate)

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		++
4.	Feeling of *Aruchi* more than last 5 days	3 (severe) +++

10. *Chardi* (Vomitting)

1.	No feeling of *Chardi*	0
2.	*Chardi* 2-3 times in a day	1 (mild) +
3.	*Chardi* more than 3 times in a day	2 (moderate)++
4.	*Chardi* more than 5 times in a day or in last 2 days	3 (severe) +++

11. *Utklesh* (excitement)

1.	No feeling of *Utklesh*	0
2.	Occasionally feeling of *Utklesh*	1 (mild) +
3.	On and off feeling of *Utklesh*	2 (moderate) ++
4.	Frequent feeling of *Utklesh*	3 (severe) +++

12. *Lomharsha* (Horripilation)

1.	No feeling of horripilation	0
2.	Occasionally feeling of horripilation	1 (mild) +
3.	On and off feeling of horripilation	2 (moderate)++
4.	Frequent feeling of horripilation	3 (severe) +++

13. *Gaurav* (Heavyness)

1.	No feeling of *Gaurav*	0
2.	Feeling of *Gaurav* in a day	1 (mild) +
3.	Feeling of *Gaurav* since 2-3 days	2 (moderate)

		++
4.	Feeling of *Gaurav* since more than 3 days	3 (severe) +++

14. *Asyamadhurya* (Sweetness in a mouth)

1.	No feeling of *Asyamadhurya*	0
2.	Occasionally feeling of *Asyamadhurya*	1 (mild) +
3.	Feeling of *Asyamadhurya* more times in a day	2 (moderate) ++
4.	Continues feeling of *Asyamadhurya* in a excess since 2-3 days.	3 (severe) +++

15. *Kaphapurnadeha* (Body fill up of *Kapha*)

1.	No feeling of body fill up of *Kapha*	0
2.	Occasionally feeling of body fill up of *Kapha* during on and off cough	1 (mild) +
3.	Intermediate feeling of body fill up of *Kapha* during on and off cough	2 (moderate)++
4.	Continues feeling of body fill up of *Kapha* during on and off cough	3 (severe) +++

16. *Praliptata* (Coating)

1.	No feeling of *Praliptata*/Normal	0
2.	Occasionally feeling of *Praliptata* during on and off cough	1 (mild)+
3.	Intermediate feeling of *Praliptata* during on and off cough since 2-3 days	2 (moderate)++
4.	Continues feeling of *Praliptata* during on and off cough more than last 3 days	3 (severe) +++

17. *Sashabda Vaishamya* (Slight disorder of voice)

1.	No disorder of voice/Normal	0
2.	Slight disorder of voice	1 (mild) +

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| 3. | Intermittent disorder of voice during on and off cough | 2 (moderate)++ |
| 4. | Continue disorder of voice during on and off cough and not to produce word | 3 (severe) +++ |

OBSERVATIONS

Table 1: Age wise distribution

Age	Grasantara		Adhobhakta	
	Frequency	%	Frequency	%
20 − 30	14	43.8	14	43.8
31 − 40	10	31.3	13	40.6
41 − 50	6	18.8	4	12.5
51 − 60	2	6.3	1	3.1

Out of 32 Patients treated in *Grasantara Kala* with *Nagaradi Yoga*, 14 (43.8%) patients belongs to age group 20 - 30 years, 10 (31.3%) patients belongs to age group 31 - 40 years, 6 (18.8%) patients belongs to age group 41 - 50 years, 2 (6.3%) patients belongs to age group 51 - 60 years.

Out of 32 Patients treated in *Adhobhakta kala* with *Nagaradi Yoga*, 14 (43.8%) patients belongs to age group 20 - 30 years, 13 (40.6%) patients belongs to age group 31 - 40 years, 4 (12.5%) patients belongs to age group 41 - 50 years, 1 (3.1%) patient belongs to age group 51 - 60 years.

Table 2: Socio-economical Status

Socio-economical status	Grasantara		Adhobhakta	
	Frequency	%	Frequency	%
Lower class	2	6.3	2	6.3
Middle class	30	93.8	29	90.6
Higher class	0	0	1	3.1

Out of 32 Patients treated in *Grasantara Kala* with *Nagaradi Yoga* as in Socio-economical status, Lower class patients were 2 (6.3%), Middle class patients were 30 (93.8%), Higher class patient was 0 (0.0%).

Out of 32 Patients treated in *Adhobhakta Kala* with *Nagaradi Yoga* as in Socio-economical status, Lower class patients were 2 (6.3%), Middle class patients were 29 (90.6%), Higher class patient was 1 (3.1%).

Table 3: Addiction wise Distribution

Addiction	Grasantara		Adhobhakta	
	Frequency	%	Frequency	%
No addiction	1	3.1	0	0
Tea	28	87.5	25	78.1
Tobacco/Mishri,Tea	3	9.4	6	18.8
Tobacco, Smoke, Tea	0	0	1	3.1

Out of 32 Patients treated in *Grasantar Kala* with *Nagaradi Yoga* as in Addiction Distribution, 1 (3.1%) patient had no addiction, 28 (87.5%) patient had Tea addiction, 3 (9.4%) patient had Tobacco/Mishri, Tea as addiction, 0 (0.0%) patient had Tea, Tobacco and Smoke as addiction.

Out of 32 Patients treated in *Adhobhakta Kala* with *Nagaradi Yoga* as in Addiction Distribution, 0 (0.0%) patient had no addiction, 25 (78.1%) patient had Tea as addiction, 6 (18.8%) patient had Tobacco/Mishri, Tea as addiction, 1 (3.1%) patient had Tobacco, Smoke and Tea as addiction.

Table 4: *Abhishyandi Ahara* wise distribution

Abhishyandi Ahara	Grasantara		Adhobhakta	
	Frequency	%	Frequency	%
Yes	18	56.3	23	71.9
No	14	43.8	9	28.1

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Out of 32 Patients treated in *Grasantara Kala* with *Nagaradi Yoga*, 18 (56.3%) patients who were taken *Abhishyandi Ahara as Hetu* and 14 (43.8%) patients were not taken *Abhishyandi Ahara as Hetu.*

Out of 32 Patients treated in *Adhobhakta Kala* with *Nagaradi Yoga* a 23 (71.9%) patients who were taken *Abhishyandi Ahara as Hetu* and 9 (28.1%) patients were not taken *Abhishyandi Ahara as Hetu.*

Table 5: *Snigdha Ahara* wise distribution

Snigdha Ahara	Grasantara		Adhobhakta	
	Frequency	%	Frequency	%
Yes	26	81.3	26	81.3
No	6	18.8	6	18.8

Out of 32 Patients treated in *Grasantar Kala* with *Nagaradi Yoga*, 26 (81.3%) patients who were taken *Snigdha Ahara as Hetu* and 6 (18.8%) patients were not taken *Snigdha Ahara as Hetu.*

Out of 32 Patients treated in *Adhobhakta Kala* with *Nagaradi Yoga*, 26 (81.3%) patients who were taken *Snigdha Ahara as Hetu* and 6 (18.8%) patients were not taken *Snigdha Ahara as Hetu.*

RESULTS

Statistical Analysis

Mann Whitney U Test is used when we have to compare two independent groups and the data is qualitative on ordinal Scale. Using Mann Whitney U test, we compare the medians of two independent groups.

Wilcoxon Signed Rank Test: Wilcoxon Signed Rank test is used when the observations (data) are qualitative and on ordinal scale (e.g. gradations like, mild, moderate severe). Using Wilcoxon Signed Rank test we compare the median between the paired observations.

For comparison between two treatments Grasantara and Adhobhakta, we used Mann-Whitney U test. From the table given below it is clear that, 'P' Value for all the symptoms is less than 0.05 (level of significance) there is significant difference in the treatment effects of *Grasantara* and *Adhobhakta*.
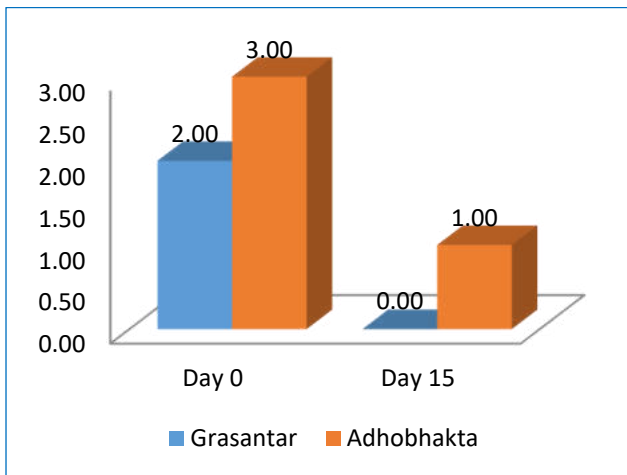
Asyamadhurya, Kaphapurna Deha, Praliptata, Sashakta Vaishamya and *Lomharsha* was not observed in any of the patients in this study in any of the group. As data was not available on the above said symptoms, statistical analysis of the symptoms is not needful.

Symptoms	Mann-Whitney U	Wilcoxon W	Z	'P'
Kasa Vega	240.500	768.500	-4.018	0.000
Sthivana - Consistency and Quantity	301.000	829.000	-3.187	0.001
Pain - Site and Severity	494.000	1022.000	-0.271	0.006
Kanthe kandu	395.500	923.500	-2.069	0.039
Bhojyanam Avrodhaccha	495.500	1023.500	-0.260	0.005
Shukpurna Galasyata	488.500	1016.500	-0.389	0.008
Pinas	472.000	1000.000	-0.561	0.005
Mandagni	495.000	1023.000	-0.245	0.006
Aruchi	348.000	876.000	-2.337	0.019
Chhardi	495.000	1023.000	-0.348	0.008
Utklesh	465.000	993.000	-0.730	0.005
Gaurav	482.000	1010.000	-0.456	0.008

Efficacy testing for *Kasa Vega*

Significance Threshold: P<0.05.

Kasa Vega	Median		Wilcoxon Signed Rank W	P - Value	% Effect	Result
	Day 0	Day 15				
Grasantar	2.00	0.00	-5.076[a]	0.000	98.72	Significant
Adhobhakta	3.00	1.00	-5.090[a]	0.000	66.27	Significant

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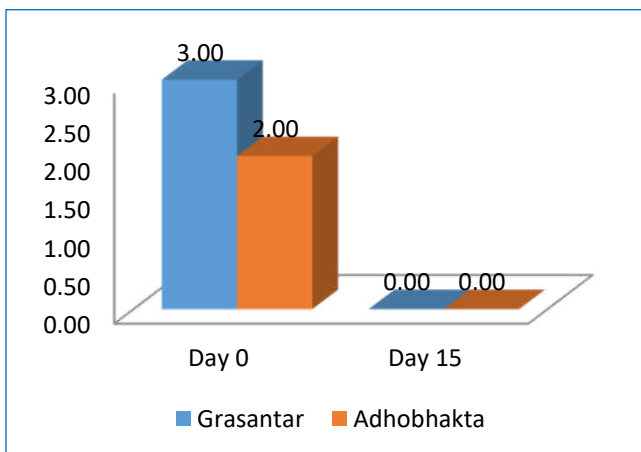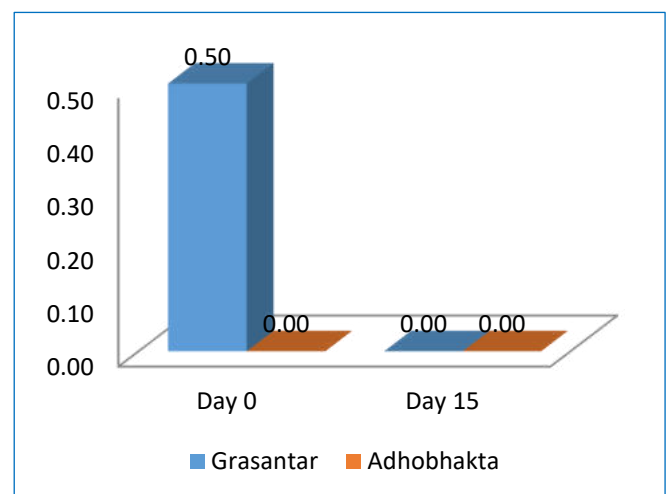**ISSN: 2456-3110**　　　　　**ORIGINAL ARTICLE**　　Sep-Oct 2017

Since, p-value = 0.00 < 0.05. we reject the null hypothesis and accept the alternate hypothesis. When patients are treated in Group A and Group B*, Kasa Vega* after treatment was significantly reduced than *Kasa Vega* before treatment at the level of α = 0.05 significance.

Efficacy testing for *Sthivana* Consistency and Quantity

Significance Threshold: P<0.05.

| Sthivana - Consistency and Quantity	Median		Wilcoxon Signed Rank W	P	% Effect	Result
	Day 0	Day 15				
Grasantara	3.00	0.00	-5.107[a]	0.0000	98.80	Significant
Adhobhakta	2.00	0.00	-5.096[a]	0.0000	85.71	Significant

Since, p-value = 0.00 < 0.05. we reject the null hypothesis and accept the alternate hypothesis. When patients are treated in group A and Group B*, Sthivana* Consistency and Quantity after treatment was significantly reduced than *Sthivana* Consistency and Quantity before treatment at the level of α = 0.05 significance.

Efficacy testing for Pain - *Site* and Severity

Significance Threshold: P<0.05.

| Pain - Site and Severity	Median		Wilcoxon Signed Rank W	P	% Effect	Result
	Day 0	Day 15				
Grasantar	0.50	0.00	-3.619[a]	0.000	95.83	Significant
Adhobhakta	0.00	0.00	-3.464[a]	0.001	95.83	Significant

Since, p-value = 0.00 < 0.05. we reject the null hypothesis and accept the alternate hypothesis. When patients are treated in group A and Group B*, Pain-Site and Severity after treatment was significantly reduced than Pain-Site and Severity before treatment at the level of α = 0.05 significance.

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Efficacy testing for *Kanthe Kandu*

Significance Threshold: P<0.05.

Kanthe Kandu	Median		Wilcoxon Signed Rank W	P	% Effect	Result
	Day 0	Day 15				
Grasantara	2.00	0.00	-5.131[a]	0.000	98.63	Significant
Adhobhakta	2.00	0.00	-5.243[a]	0.000	86.30	Significant
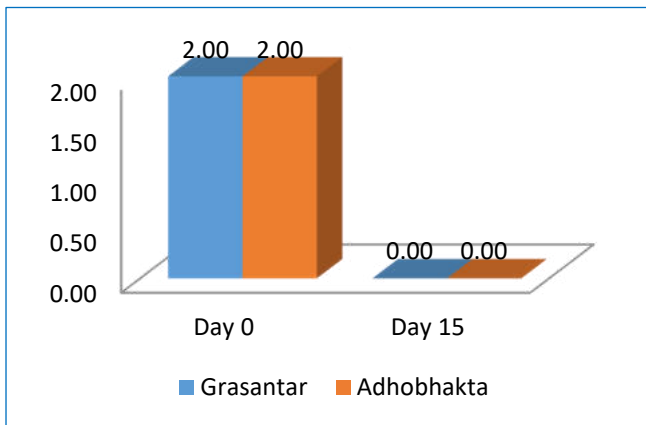
Since, p-value = 0.00 < 0.05. we reject the null hypothesis and accept the alternate hypothesis. When patients are treated in group A and Group B, *Kanthe Kandu* after treatment was significantly reduced than *Kanthe Kandu* before treatment at the level of α = 0.05 significance.

Efficacy testing for *Bhojyanam Avrodhaccha*

Significance Threshold: P<0.05.

| *Bhojyanam Avrodhaccha*	Median		Wilcoxon Signed Rank W	P	% Effect	Result
	Day 0	Day 15				
Grasantara	0.00	0.00	-3.464[a]	0.001	95.83	Significant
Adhobhakta	0.00	0.00	-3.500[a]	0.000	92.59	Significant

Since, p-value = 0.00 < 0.05. we reject the null hypothesis and accept the alternate hypothesis.

When patients are treated in group A and Group B, *Bhojyanam Avrodhaccha* after treatment was significantly reduced than *Bhojyanam Avrodhaccha* before treatment at the level of α = 0.05 significance.

Efficacy testing for *Shukpurna Galasyata*

Significance Threshold: P<0.05.

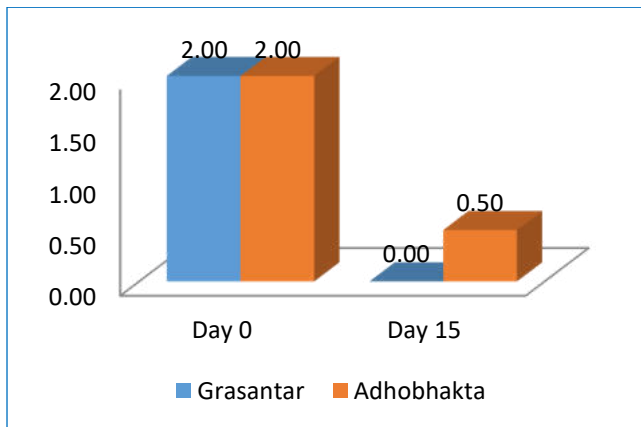| *Shukpurna Galasyata*	Median		Wilcoxon Signed Rank W	P	% Effect	Result
	Day 0	Day 15				
Grasantara	2.00	0.00	-3.127[a]	0.002	95.00	Significant
Adhobhakta	0.00	0.00	-2.714[a]	0.007	94.44	Significant
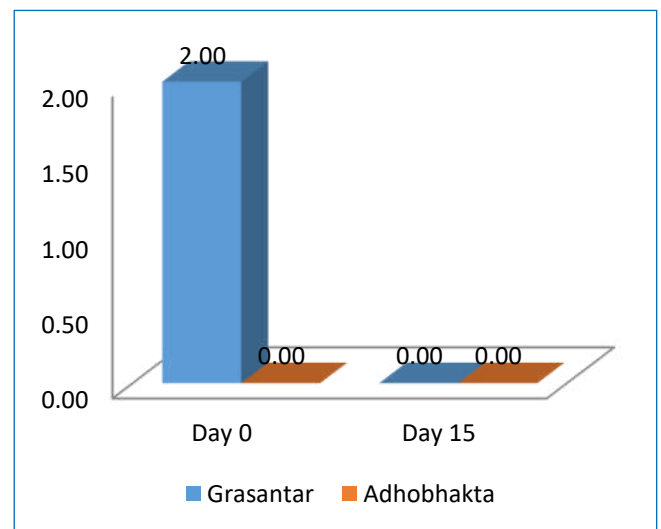
Since, p-value = 0.00 < 0.05. we reject the null hypothesis and accept the alternate hypothesis.

When patients are treated in group A and Group B, *Shukpurna Galasyata* after treatment was significantly reduced than *Shukpurna Galasyata* before treatment at the level of α = 0.05 significance.

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Efficacy testing for *Pinas*

Significance Threshold: P<0.05.

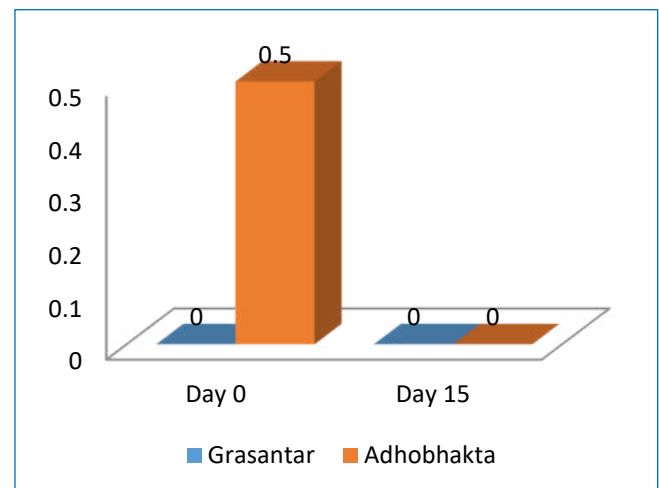| *Pinas*	Median		Wilcoxon Signed Rank W	P	% Effect	Result
	Day 0	Day 15				
Grasantara	2.00	0.00	-3.954[a]	0.000	97.67	Significant
Adhobhakta	2.00	0.50	-4.110[a]	0.000	69.81	Significant
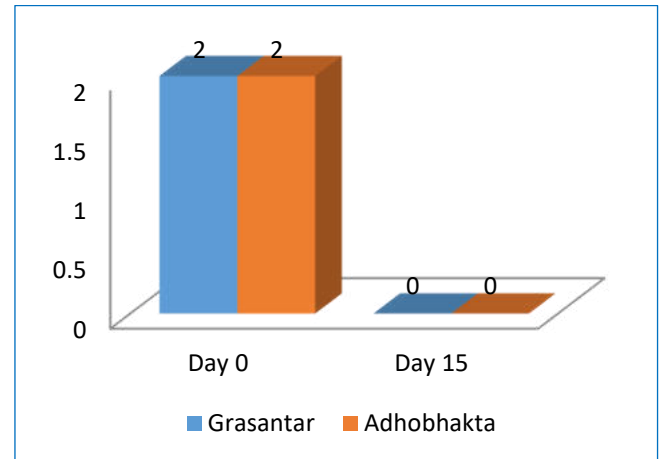
Since, p-value = 0.00 < 0.05. we reject the null hypothesis and accept the alternate hypothesis. When patients are treated in group A and Group B, *Pinas* after treatment was significantly reduced than *Pinas* before treatment at the level of α = 0.05 significance.

Efficacy testing for *Mandagni*

Significance Threshold: P<0.05.

Mandagni	Median		Wilcoxon Signed Rank W	P	% Effect	Result
	Day 0	Day 15				
Grasantara	2.00	0.00	-3.900[a]	0.000	97.44	Significant
Adhobhakta	2.00	0.00	-3.977[a]	0.000	76.60	Significant

Since, p-value = 0.00 < 0.05. we reject the null hypothesis and accept the alternate hypothesis. When patients are treated in group A and Group B, *Mandagni* after treatment was significantly reduced than *Mandagni* before treatment at the level of α = 0.05 significance.

Efficacy testing for *Aruchi*

Significance Threshold: P<0.05.

Aruchi	Median		Wilcoxon Signed Rank W	P	% Effect	Result
	Day 0	Day 15				
Grasantara	0.00	0.00	-4.456[a]	0.000	97.62	Significant
Adhobhakta	0.50	0.00	-3.619[a]	0.000	88.89	Significant

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Since, p-value = 0.00 < 0.05. we reject the null hypothesis and accept the alternate hypothesis. When patients are treated in group A and Group B, *Aruchi* after treatment was significantly reduced than *Aruchi* before treatment at the level of α = 0.05 significance.

Efficacy testing for *Chhardi*

Significance Threshold: P<0.05.

Chhardi	Median		Wilcoxon Signed Rank W	P	% Effect	Result
	Day 0	Day 15				
Grasantara	0.00	0.00	-2.121ᵃ	0.034	83.33	Significant
Adhobhakta	0.00	0.00	-2.530ᵃ	0.011	75.00	Significant

Since, p-value = 0.00 < 0.05. we reject the null hypothesis and accept the alternate hypothesis. When patients are treated in group A and Group B, *Chhardi* after treatment was significantly reduced than *Chhardi* before treatment at the level of α = 0.05 significance.

Efficacy testing for *Utklesh*

Significance Threshold: P<0.05.

Utklesha	Median		Wilcoxon Signed Rank W	P	% Effect	Result
	Day 0	Day 15				
Grasantara	0.00	0.00	-2.842ᵃ	0.004	94.44	Significant
Adhobhakta	0.00	0.00	-3.307ᵃ	0.001	92.00	Significant

Since, p-value = 0.00 < 0.05. we reject the null hypothesis and accept the alternate hypothesis. When patients are treated in group A and Group B, *Utklesh* after treatment was significantly reduced than *Utklesh* before treatment at the level of α = 0.05 significance.

### Efficacy testing for *Gaurava*

Significance Threshold: P<0.05.

Gaurava	Median		Wilcoxon Signed Rank W	P - Value	% Effect	Result
	Day 0	Day 15				
Grasantara	0.00	0.00	-3.286ᵃ	0.001	96.77	Significant
Adhobhakta	0.00	0.00	-3.448ᵃ	0.001	66.67	Significant

Since, p-value = 0.00 < 0.05. we reject the null hypothesis and accept the alternate hypothesis. When patients are treated in group A and Group B, *Gaurav* after treatment was significantly reduced than *Gaurav* before treatment at the level of α = 0.05 significance.

Overall Result of *Grasantara* and *Adhobhakta Kala*

The average result for all symptoms in *Kaphaja Kasa Vyadhi* in *Grasantara* and *Adhobhakta Kala* is as below.

Overall Result	
Grasantar Kala	*Adhobhakta Kala*
95.84%	82.51%
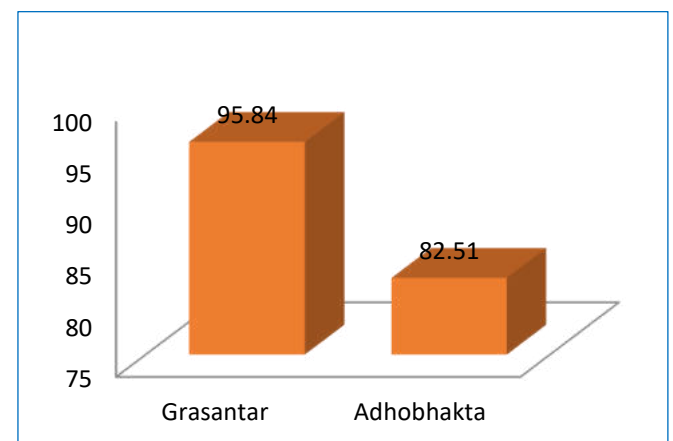
DISCUSSION

Aushadha is a substance that relives fear and pain of diseases. *Sevana* means to be taken by mouth. Actual

aim of *Aushadha Sevana Kala* is to provide the fulfilment towards desired action of *Dhatu-Samya*.

Classification of *Bhaishaja* as *Swastasya Oorjaskar* which enhances the health of a individual and *Arthasya Rogahara* which cures the diseases of a diseased. *Caraka* stated that *Aushadi* are *Veerya Pradhana* while the *Ahara Dravyas* are *Rasa Pradhana*. *Bheshaijya Kala* is meant for *Shamana* purpose and not to be advocated in emergency conditions. *Bhaishajya Kala* is the time of administration of *Bheshaja (Karana)*. It is to be decided by *Karana (Bhishak)* in an effort towards the establishment of *Dhatu Samya*. *Antarbhakta and Nishi* are the special contributions of *Susruta and Vagbhata* respectively. *Aushadha Kala* mainly depends on the predominance of the *Pancha Vata*. Hence, *Vata* is responsible for the activity of activity of drug administered at specific time.

Duspariharyata (inevietability) of *Kala* in the production of any effect was first explored and utilized in therapeutics by the stalwarts of Ayurveda, and one of them is *Bheshajya Kala*. Numbers of *Bhaishajya Kala* are ten as per *Charaka, Susruta, Astanga Hrudaya, Kashyapa* and Eleven are described in *Ashtanga Sangraha and Sharangadhara* has condensed the *Bhaishajya Kala* into five. Oral route of administration is advocated for the intake of medicines. Majority of *Bheshajya Kala* are described in relation to food.

The rate of metabolism of *Bheshaja* by *Agni* is controlled by food with the aid of proper *Bhaishajya Kala*.

Food, presenting symptom, absorption of drug, prevention of side effects and expected action of drug were seen to be determinants of time of administration of drugs in the allied sciences. Majority of *Bhaishajya Kala* (66%) are described in relation to food.

Charakacharya has explained 5 subtypes of *Vata Dosha* namely *Prana, Udana, Vyana, Samana, Apana* and explained 10 *Aushadha Sevana Kala* in accordance with them.

Charaka's Ausadha Sevana Kala

Pratah Niranna Kala is specified by *Charaka*. It is considered by *Cakrapani* into the *Bhuktadau Kala*. The *Bhuktadau Kala* has been split by *Cakrapani* into two *Pratah Bhuktadau Kala* and merely *Bhuktadau Kala*. *Antarabhakta Aushadh Sevan Kala* which is as per the commentators, it is *Madhyanha*; which could be included into the *Dinaveksa Kala* of *Charaka*. Same is true for the *Nisha Kala* which is also a component of the *Dinaveksa Kala*.

Role of *Grasantar Kala* in *Kaphaja Kasa Vyadhi* using *Nagaradi Yoga*

After detailed study of *Grasantar Kala*, it was observed that this *Kala* is suitable for *Prana Vayu Dushti Vikara* i.e. in *Kaphaja Kasa Vyadhi.*

In *Kantha*, both reflex activities of *Prana and Udana Vayu*, require co-ordinate action. When the reflex activity of *Prana Vayu* is in action such as while swallowing food, initiation of the action of *Udana Vayu* by way of talking brings a collusion between the two reflexes and then the obstructed *Prana Vayu* takes a deviation by imitating or following the *Udana Vayu* in its action and comes out through oro or naso pharynx with a sound resulting in Cough.

Relation of *Kaphaj Kasa Vyadhi* and *Grasantar Kala* can be understood by following points

Grasantar Kala is for *Prana Vayu Dushti Vikara* and *Kasa Vyadhi* constitute *Prana Vayu* as a main factor of *Samprati*. Therefore, drug administered given at *Grasantar Kala* acts on *Prana Vayu.*

As the process of swallowing of *Ahara* is under the control of *Prana Vayu, Aushadha* given along with bolus of food will act on *Prana Vayu*. *Sagras and Grasantar Aushadha Sevan Kala* will also act on this mechanism.

CONCLUSION

Nagaradi Yoga when administered in patients of *Kaphaja Kasa* at *Grasantara Kala* shows statistically significant result (P<0.05) over *Adhobhakta Kala*. It gives significant results in *Grasantaar Kala* i.e. 95.84% in comparison with *Adhobhakta Kala* is 82.51%.

ORIGINAL ARTICLE

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