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EVALUATION AND EFFICACY OF SHARAPUNKHA MULA IN KAPHAJA KASA

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ABSTRACT

It has been said *"Jagateva Vanoushadham*" i.e. each *dravya* in the universe acts as a medicine. *Ayurveda* believes in the management of disease with *Trisutra* i.e. *Hetu, Linga, Oushadha* and the major account of the treatment is done by the *Oushadha* only. This clinical study attempts to evaluate the efficacy of *Sharapunkha mula* in *kaphaja Kasa.* Based on the theoretical and clinical symptomatology*, Kaphaja kasa* was correlated to chronic bronchitis and *Sharapunkha (Theprosia purpurea. linn*) was taken as trial drug. For the purpose of clinical study, a total of 30 patients were registered into two trial groups. In the first group, *Sharapunkha mula churna* 3-6 g B.D. with luke warm water was given whereas the second group was administered *Sharapunkha mula kwatha 2*0 ml. B.D. *Kapha Nishtivana, Kasa Vega, Rug Vedana* and *Shira Shoola* were taken as subjective parameters and Hb%, RBC, WBC, ESR were taken as objective parameters. All the patients were assessed before and after treatment. The trial drug *Sharapunkha mula* showed highly significant results in both subjective and objective parameters. On comparing the studies between the two groups, group B showed significant results than group A i.e. *Sharapunkha mula kwatha i*s more effective than the *Sharapunkha mula churna in* treating *kaphaja kasa*. The study concluded that the trial drug *Sharapunkha mula kwatha* is more efficacious as compared to *churna.*

Keywords: Chronic bronchitis, *Kaphaja kasa, Sharapunkha, Theprosia purpurea*

INTRODUCTION

According to our ancient *Ayurvedic* texts, *prana* is related with life; therefore any abnormality in its function leads to disturbance of all the body functions as *prana* is sarvagata. *Prana* flows along with *rakta* throughout the body providing nutrition to all body tissues, so its significance in this disease is of utmost importance, though *kasa* has remained only as a minor and neglected problem in this era, it is one of the most common disease and one of the *pranavaha srotodusti vikara*. *Kasa* may develop as an independent disease, may be a *lakshana* associative to other disease and sometimes may develop as *upadrava* of a disease. Breathing is the most important action of *prana vaha srotas*, without which

one cannot survive; we exchange the respiratory gases with the exothermal atmosphere almost 16 times per minute, that makes *prana vaha srotas* to be one of the exposed *srotas* of our body and hence vulnerable to *dushti*. According to *Sushruta*, *Bhavaprakasha, Yogaratnakar and Madhav Nidaan a* description of *kasa* is that, due to the *nidana sevana* vitiation *of prana vayu* takes place and this get mixed with *udana vayu* which causes abnormal, forceful expulsion of *vayu* from the mouth creating peculiar sound which is similar to that of sound produced by broken bronze vessel[1,2,3,4]. *Kasa* has been described under various categories in the classics of *Ayurveda*– as an independent disease. Depending upon nature of *Kasa* it can be classified into two important varieties*, Shushka Kasa* and *Ardra Kasa.* The *Kasa*, which is not associated *with kapha nishtivana*, comes under *shushka Kasa* whereas *Ardra Kasa* is associated with *kapha nishtivana* or expectoration*. The kaphaja Kasa* comes under *Ardra* variety of Kasa .*Vata* and *Kapha* are the two key pathological factors involved in the *samprapti* of *Kaphaja Kasa*[5]. The clinical features of *kaphaja kasa* mimic very well with chronic bronchitis which is characterized by productive cough due to excessive mucus secretion in the bronchial tree not caused by local broncho pulmonary disease on most of the days for at least three months of the year, for at least two consecutive years [6].

In *Ayurvedic* texts a wide range of medicines and different lines of treatment for the management *of kaphaja Kasa* are suggested. Several herbs have been described in *Ayurvedic* literature one among them is *Sharapunkha* [7, 8]. Smoke of dried *sharapunkha mula* is an excellent remedy for cough [9]. In this present study an attempt has been made to evaluate efficacy of Sharapunkha mula *in kaphaja kasa* by means of a comparative study between *sharapunkha mula churna* and *sharapunkha mula kwath* with a view to find out a therapeutically efficacious, safer, cost effective and an easily available drug.

Aim & Objectives:

1. To evaluate the clinical efficacy of *Sharapunkha mula churna* with luke warm water in *kaphaja Kasa*.
2. To evaluate the clinical efficacy of *Sharapunkha Mula kwatha* in *kaphaja Kasa.*
3. To compare the efficacy *of sharapunkha mula churna* and *sharapunkha mula kwatha*.

Material and Methods

Study Protocol:

1. Conceptual

The available literature was scrutinized for the study of *kasa* w.s.r to Chronic Bronchitis in various *Ayurvedic* and Modern texts.

2. Clinical Study

- **Trial type**

Randomized trial

- **Sample size:**

Total 30 patients (15 in each Group) were registered fulfilling all the inclusion criteria.

- **Selection Criteria**

Patients suffering from *kaphaja kasa* were selected from OPD and IPD of DGM Ayurvedic Medical College, Hospital and Research center, Gadag.

- **Posology**

A. Group A -*Sharapunkha mula churna* 3-6 g B.D. with luke warm water.
B. Group B - *Sharapunkha mula kwatha* 20- ml. B.D.

- **Criteria for selection of patients**

A. **Inclusion criteria:**

a) Patients in the age group between 20 to 60 years were selected.

b) Patients having sign and symptoms *of kasa* as per classical texts.

c) Selection of patients was irrespective of sex, work and socio-economic class.

B. Exclusion criteria:

a) Pregnant women were excluded from the trial.
b) Patients having kasa as a symptom of other disease were excluded.

c) Patients having complications such as heart disease, pulmonary T.B. Malignancy of the lungs, pneumonia, pleural effusion, HTN, D.M, S.T.D. were excluded.
d) Patients taking allopathic or other medications were also excluded.

- **Criteria of assessment**

Improvement in associated symptoms was assessed by scoring and gradation method based on subjective and objective parameters of *kaphaja kasa*.

A. Subjective parameters:

- *Kapha Nishtivana*
- *Kasa Vega.*
- *Rug Vedana.*
- *Shira Shoola.*

B. Objective parameters:

For the assessment of objective improvement,

- Hb %
- WBC Count.
- RBC Count.
- E.S.R.

- **Study duration**

7 days and follow up of 15 days.

- 1st assessment – Before the treatment
- 2nd assessment – 3rd day after initiation of medicine
- 3rd assessment - 7th day after treatment
- 4th assessment – 15th day (end of follow up)
- To assess the overall 1st and 4th assessment were considered.

VIII. Statistical Analysis:

Statistical analysis was done for subjective and objective parameters before treatment, after treatment, and Follow up. Analysis was done by calculating Mean, Standard Deviation (S.D), Standard Error (S.E), t-Value and P- Value at 0.001 levels.

RESULT AND DISCUSSION

The clinical study entitled "Evaluation of efficacy *of Sharapunkha mula* in *Kaphaja Kasa*" was conducted in post graduation and research center of Sri. DGM Ayurvedic Medical College and Hospital, Gadag. The study has also made an attempt to co-relate *kaphaja Kasa* with chronic bronchitis. *Kaphaja kasa* is a *kapha Pradhan vyadhi* with the main culprit dosha Vata. *Kasa* is caused by *pratiloma gati* of *vayu* because *of srotas* obstruction by *kapha prakopa*. *Acharya Charaka* has explained the etiology of particular *doshaj kasa* [10]. Modern science has mentioned pollution, smoking of cigarettes, allergens, pollen grains, dust, cold weather as its etiological factors[11] etc. which can be co- related with the normal etiology of *kasa*. As far as the pathogenesis is concerned, first of all hyperplasia (*sanchaya)* of the mucus glands occur, followed by thickness and distension (*prakopa*) of the large airways. The mucus secreted by the mucus glands and the goblet cells in the large airways are coughed out *(prasara*) whereas in the small airways it causes obstruction of the lumen, forming a mucus plug (*sthanasamsharya).* Later on, Increase in the obstruction of the small airways is perpetuated causing thickening of bronchioles by fibrosis and muscular hypertrophy[12] resulting in cough and expectoration (*vyakta).* If this condition is not treated, then the lesion may spread and produce complications (*bheda*). In this clinical study after observing the result of subjective and objective parameters statistically, *Sharapunkha mula* has yielded excellent results in both groups, On the other hand the trial drug of group B is more effective as compared to group A. The *Sharapunkha kwath kalpana* is therapeutically more efficacious over *churna* as *kwath i*s a decoction in which the water soluble extracts are obtained through boiling water. The extraction of active constituents from an herb to water medium is easy at a high temperature. Moreover, when *kwath* is administered empty stomach the maximum absorption of water soluble active principles occurs through stomach and intestines when compared *to churna.*

Probable Mode of action of drug:

Since *Samhita period, Sharapunkha* has been used as medicine. *Nighantu's* have described wide range of therapeutic properties of the plant and have indicated it in *Kasa, Shwasa, Jeerna jwara [13], Pleeha vriddhi, Yakruta vridhhi[14] and Rasayana[15]*. *Kasa* is a

kapha vataja disease and *sharapunkha* has been mentioned as *Kapha vata shamaka*[16]. *Sharapunkha* has *tikta, kashsaya rasa*[17, 18] which is also *kaphahara*. The *ushna veerya* and *katu vipaka* [19] of the drug is also responsible for its *kapha hara* as well as *vata hara* action, which reduces the *avarodha* and aids in *vatanulomana* and owing to this *vata anulomaka* action it rectifies the *pratiloma gati* of *vayu*. *Sharapunkha* has also been mentioned as Anti inflammatory, Analgesic, Antibacterial and an Antioxidant [20].

Comparative Statistical results of Subjective parameters:

By comparing the studies between the two groups, group B showed significant results than group A i.e. *Sharapunkha mula kwatha* is more effective than *Sharapunkha mula churna* in treating *kaphaja kasa*. Group B was statistically significant at ($p<0.001$) in all the subjective parameters except *Rug Vedana*.

Table 1: *Kapha Nishtivana*

Criteria	Group	Mean	SD	SE	PSE	T value	P value	Remarks
BT	A	2.333	1.112	1.299	0.412	0.485	>0.05	NS
	B	2.533	1.06	0.284				
AT	A	1.466	0.99	0.266	0.352	0.948	>0.05	NS
	B	1.8	0.861	0.231				
AF	A	0.6	0.632	0.17	0.294	0.224	>0.05	NS
	B	0.666	0.899	0.241				

The mean effect of '*Kapha nishtivana'*, in group-A, before treatment was 2.333 with S.D. 1.112 is reduced to 1.466 with S.D. 0.99 and after the follow-up is reduced to 0.6 with S.D. 632. In group-B, before treatment was 2.533 with S.D. 1.06 is reduced to 1.8 with S.D. 0.861 and after the follow-up is reduced to 0.666 with S.D. 899.

Table 2: *Kasa Vega*

Criteria	Group	Mean	SD	SE	PSE	T value	P value	Remarks
BT	A	2.266	0.798	0.214	0.338	0.198	>0.05	NS
	B	2.333	0.975	0.262				
AT	A	1.666	0.617	0.165	0.283	0.473	>0.05	NS
	B	1.8	0.861	0.231				
AF	A	1.00	0.534	0.143	0.223	0.6	>0.05	NS
	B	0.866	0.639	0.172				

The mean effect of '*Kasa Vega*" in group-A, before treatment was 2.266 with S.D. 0.798 is reduced to 1.666 with S.D. 0.617 and after the follow-up is reduced to 1.0 with S.D. 534. In group-B, before treatment was 2.333 with S.D. 0.975 is reduced to 1.8 with S.D. 0.861 and after the follow-up is reduced to 0.866 with S.D. 0.639.

Table 3: *Rug Vedana*

Criteria	Group	Mean	SD	SE	PSE	T value	P value	Remarks
BT	A	2.333	1.046	0.281	0.425	0.47	>0.05	NS
	B	2.133	1.187	0.319				

AT	A	1.333	0.723	0.194	0.294	0.227	>0.05	NS
	B	1.4	0.828	0.222				
AF	A	0.8	0.56	0.15	0.218	0.307	>0.05	NS
	B	0.733	0.593	0.159				

The mean effect of '*Rug Vedana* ', in group-A, before treatment was 2.333 with S.D. 1.046 is reduced to 1.333 with S.D. 0.723 and after the follow-up is reduced to 0.8 with S.D. 56. In group-B, before treatment was 2.133 with S.D. 1.187 is reduced to 1.4 with S.D. 0.828 and after the follow-up is reduced to 0.733 with S.D. 0.593.

Table 4: *Shira Shoola*

Criteria	Group	Mean	SD	SE	PSE	T value	P value	Remarks
BT	A	2.2	1.082	0.290	0.442	0.775	>0.05	NS
	B	1.866	1.245	0.334				
AT	A	1.4	0.828	0.222	0.324	0.413	>0.05	NS
	B	1.266	0.883	0.237				
AF	A	0.466	0.639	0.172	0.243	1.646	>0.05	NS
	B	0.866	0.639	0.172				

The mean effect of '*Shira Shoola'*, in group-A, before treatment was 2.2 with S.D. 1.082 is reduced to 1.4 with S.D. 0.828 and after the follow-up is reduced to 0.466 with S.D. 639. In group-B, before treatment was 1.866 with S.D. 1.245 is reduced to 1.266 with S.D. 0.883 and after the follow-up is reduced to 0.866 with S.D. 0.639.

Overall results on Objective Parameters:

On comparing the effect on objective parameters of group A and B, group A trial drug was found more effective in increasing Hb% with more highly significant result at $p<0.001$, compared to group B at $p<0.02$. On the contrary, WBC and ESR counts were found more effectively decreased in group B i.e. group B had highly significant result at $p<0.0001$ in WBC count as compared to group A, where group A was significant at $p<0.01$. Again, group B showed highly significant at $p <0.001$ in ESR compared to group A at $p<0.05$. So group B trial drug is more effective in treating *kaphaja kasa as* compared to Group A.

Comparative Statistical results of Objective parameters

Table 5: Hb%

Criteria	Group	Mean	SD	SE	PSE	T value	P value	Remarks
BT	A	11.973	0.788	0.212	0.276	1.231	>0.05	NS
	B	11.633	0.66	0.177				
AT	A	12.166	0.675	0.181	0.255	1.647	>0.05	NS
	B	11.746	0.671	0.180				

The mean effect of 'Hb%', in group-A, before treatment was 11.973 with S.D. 0.788 is increased to 12.166 with S.D. 0.675 after the treatment. In group-B, before treatment was 11.633 with S.D. 0.66 is increased to 11.746 with S.D. 0.671 after the treatment.

Table 6: RBC Count

Criteria	Group	Mean	SD	SE	PSE	T value	P value	Remarks
BT	A	4.646	0.232	0.062	0.094	1.914	>0.05	NS
	B	4.466	0.266	0.071				
AT	A	4.673	0.252	0.067	0.095	1.684	>0.05	NS
	B	4.513	0.255	0.068				

The mean effect of 'RBC count', in group-A, before treatment was 4.646 with S.D. 0.232 is increased to 4.673 with S.D. 0.252 after the treatment. In group-B, before treatment was 4.466 with S.D. 0.266 is increased to 4.513 with S.D. 0.255 after the treatment.

Table 7: WBC Count

Criteria	Group	Mean	SD	SE	PSE	T value	P value	Remarks
BT	A	8046.667	942.593	253.37	293.654	0.839	>0.05	NS
	B	8293.333	552.224	148.77				
AT	A	7800.00	877.496	235.886	272.718	0.268	>0.05	NS
	B	7873.333	509.154	136.869				

The mean effect of 'WBC count', in group-A, before treatment was 8046.667 with S.D. 942.539 is reduced to 7800.00 with S.D. 877.496 after the treatment. In group-B, before treatment was 8293.333 with S.D. 552.224 is reduced to 7873.333 with S.D. 509.154 after the treatment

CONCLUSION

Kasa has been mentioned as a disease as well as symptom of other diseases. *Kaphaja kasa* is a common disease in our community. Based on etiology and symptomatology, it was correlated to Chronic Bronchitis. The disease doesn't belong to a specific age group or any socio-economical class of society. Rather it's a disease which is present in all age groups. Environmental factors such as pollutants, allergens, smoke, dust etc have a great influence on this disease as these are unavoidable factors. Hence it is need of the time to ascertain an effective management of *kaphaja kasa.* The trial drug Sharapunkha showed highly significant results in both subjective and objective Parameters. The trial drug *Sharapunkha kwath* is more efficacious than *Sharapunkha mula churna since Sharapunkha mula kwath* is readily available for therapeutic action as it is easily digested and absorbed. Moreover the chances of contamination in a *kwath* are less as compared to *churna*. As Chronic bronchitis is a very common and a widespread disease, this sample size was small to generalize the result and the study was limited to the patients who attended the health check up camps, a similar study should be conducted on a large sample size and for a longer duration so as to know the lasting of the clinical effects.

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