



Effect of Srngyaadi Leha and it's syrup in the management of kaphaja kaasa in children

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ABSTRACT: *Kaphaja kaasa* is one of the *kaasaroga* which can be co-related with URTI in modern science. *Aacarya* Chakrapani has depicted “*Srngyaadi Leha*” for treating *kaasa* in children. *Leha kalpana* possesses certain inconveniences while administration, handling, packaging and transportation. This urged the need of conversion of *Srngyaadi Leha* into its new dosage form. The perception of the present study is to find out the clinical effect of *Srngyaadi Leha* and syrup in *kaphaja kaasa*. This disease is now a worldwide health hazard. Though lot of work has been carried out in medical science number of *kaasa* in children's cases are reporting in day-to-day practice and it has become a challenge for the researchers. Some studies have been done in the management of *kaphaja kaasa* with *Srngyaadi Leha*, but there are no studies on different dosage forms. So, the present study was carried out to compare the results of *Srngyaadi Leha* and its new dosage form *Srngyaadi syrup*.

In *kaasa kaphadosha*, *vaatadosha*, *rasa dhaatu* and *anna dhaatu* are vitiated. *Srngyaadi Leha* and its syrup have *kapha-hara* properties. So, these drugs are used for the clinical study to compare their efficacy in the management of *kaphaja kaasa*. In this study all the patients were selected according to the inclusion criteria and by single blind randomized method. Design of the study was two arm comparative trials. Thirty patients were randomly divided into two groups A and B and treated for 10 days. Group A was treated with *Srngyaadi Leha* and Group B was treated with *Srngyaadi syrup*. After complete course of treatment, the data collected was statistically analysed and tabulated. In this study Group A has shown better and significant ($P < 0.001$) results than Group B. Group A showed highly effective result in reducing symptoms like character of bouts, character of cough, frequency of bouts/day, *ghana kapha*.

Keywords : *Kaphaja kaasa*, *Srngyaadi Leha*, Cough

Introduction

Management of childhood illness is significantly at variance with that of an adult. *Srngyaadi Leha*, is one such emphatic substructure mentioned by *Aacaarya* Chakrapani in his treatise *Cakradutta* in *Balarogadhikaara* for the administration in *kaasa* in children^[1]The constituents of the *Leha* viz., *Karkatasrugi*, *Ativisha* and *Musta* with honey. In the coeval study, this drug is tabbed for the treatment of *kaphaja kaasa* and is indoctrinated into new dosage forms, that is, syrup,

to see the contrastive effects. *Kaasa* has occupied the dual place as a cause and as a symptom/complication and a separate entity as a disease, with distinct aetiopathogenesis, described by Caraka in *cikitsaa sthana*^[2], *Susruta nidaansthana*^[3] *Ashtanga sangraha*^[4], *Ashtanga hrdaya*^[5]and distinctly explained in *Maadhava nidaana*^[6]. *Kapha dosha* is dominant in childhood which is one of the causes in producing *kaasa*. At the OPD level, it has been observed that the incidence of respiratory infection presenting with

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cough is more. Early treatment is very necessary in the case of *kaasa* as it is a potential *nidaanartha kara vyaadhi* (causative factor for another disease) to produce *kshaya* (emaciation)^[7]. It is important to treat *kaasa* in childhood at the earliest as it may hamper the proper *vrdhhi* (growth and development) of a child^[8].

Cough is one of the most common difficulties referred to by paediatricians. Cough in children causes significant anxiety to parents, and the use of inappropriate or unnecessary medications for a cough is associated with adverse measures^[9]. Childhood acute respiratory infection (ARI) is a significant public health problem, especially in developing countries^[10].

W.H.O estimates, ARI causes 3.9 million deaths throughout the world every year^[11]. Upper respiratory tract contamination with cough in school children occurs 7–10 times per year^[12]. *Srngyaadi Leha* - A polyherbal ayurvedic compound, is useful in treating respiratory disorders and promoting health. The use of these medications not only treats the disease but also provides nutrition and develop natural immunity of the body. So, the objective of this research work is to provide a unique, accurate & effective method of dealing with the complexities of this disease. Under this study, the formulation of a new drug dosage from *Srngyaadi Leha* led to a marginal increase in the cost, but the researcher has been able to achieve more palatable and economic results.

Material & methods

Preparation of test drugs

Srngyaadi Leha was prepared by different the textual references. First, *coornikarana* process was done by according to *Sharngadhara Samhita*^[13]. [ma kh 6/1] After that *Leha* was prepared according to the classical text *Chakradutta*^[14]. In the preparations of *Srngyaadi syrup*, *kwatha* was prepared according to *Sharngadhara Samhita*^[15]. [ma kh 6/1]. And final product syrup was prepared conferring to Indian

pharmacopeia¹⁶, 66.7% of sugar was added in syrup^[16].

Selection of patients

Out patients and In patients of Department of Rasa Shastra & Bhaishajya Kalpana and Department of Bal Rog, UAU, Rishikul campus Hospital Haridwar, fulfilling the criteria of diagnosis of *Kaphaja kaasa*, were selected, and registered with out considering age, sex, and religion.

Criteria for diagnosis

Patients having signs and symptoms of *kaphaja kaasa*, as described in the ayurvedic classics, namely, *ghana kapha*, *chardi*, *peenasa*, *kaasa*, character of cough, character of bouts, colour of sputum and frequency of bouts, were selected in all the studies. Detailed history was taken and physical examination was done based on a special proforma prepared by scholar, incorporating all signs and symptoms of the disease.

Investigations

Routine haematological, especially white blood cell (WBC) count, erythrocyte sedimentation rate (ESR) and absolute eosinophil count (AEC) were carried out in all the patients to assess the condition of disease and to exclude any other pathology.

Diet and restriction

Patients were advised to avoid the aggravating factors mentioned in standard literature of *ayurveda*.

Posology

In Group A *Srngyaadi Leha* was given at a dose of 5.5-16.5g/day and in group B *Srngyaadi syrup* was administered at a dose of 5- 15 ml/ day. All the drugs were given for 10 days in two divided doses.

Criteria for the assessment

Effects of the clinical trial drugs were analysed in terms of relief produced in basic signs and symptoms before and after treatment. Before and after treatment, the effects of trial medications were examined on specific parameters such as WBC count, AEC, and ESR. Changes observed

in signs and symptoms were assessed by adopting suitable scoring method.

Results

On subjective parameters

Present clinical trial showed the following results. Effect on character of cough statistically highly significant ($p < 0.001$) result was obtained in group A. Group A relief was 85.18%, and in group B, relief was 70.83%. Thus, the better result we obtained in group A than group B ($p < 0.001$). Administration of medication in group A 86.95%, lessening in the character of bouts, which was statistically highly significant at $P < 0.001$ and in group B, 66.66% was lessened, which was statistically significant at $P < 0.001$. After ten days of provided treatment, 87.5% effects in the frequency of bouts in group A, which was statistically highly significant at $P < 0.001$ and 68.18% effect in group B, which was statistically significant at $P < 0.001$. Effect on *ghana kapha* in Group A, 86.95 % and in group B, 75% relief

was obtained, which was statistically significant ($p < 0.001$) in *ghana kapha*. After Administration of drug 87.50% amenities in group A which was statistically highly significant at $P < 0.001$, and 71.42% amenities in group B, which was statistically significant effect on the colour of sputum at $P < 0.001$. 40% Effect was found in group A and 66.66% relief in group B on chest pain. When these values were analysed statistically, the p-value showed significant value (< 0.050) and highly significant value (< 0.001) for group A and group B, respectively. Statistically highly significant ($p < 0.001$) result was obtained in group A. Statistically significant ($p < 0.05$) result was obtained in group B. Group I relief was 77.77%, and in group B, relief was 63.63%. Thus, the mild better result was obtained in *peenasa* in group B. Relief on *chardi* in Group A was 50 %, and in the group, B relief was 33.33% thus the mild better result was obtained in *chardi* group A. [Table 1]

Table No. 1
inter-group comparison of subjective parameter

S.No	Subjective Parameter	Group	N	Mean Rank	Sum of Rank	U-test	P-Value	Result
1.	Character of cough	Group A	15	1.53	277.5	67.5	<0.05	Sig
		Group B	15	1.13	187.5			
		Total	30					
2.	Character of bouts	Group A	15	1.33	275	70	<0.05	Sig
		Group B	15	0.93	190			
		Total	30					
3.	Frequency of bouts/day	Group A	15	1.4	271.5	73.5	<0.05	Sig
		Group B	15	1	193.5			
		Total	30					
4.	<i>Ghana kapha</i>	Group A	15	1.33	250.5	79.500	<0.05	Sig
		Group B	15	1.07	184.5			
		Total	30					
5.	Colour of sputum	Group A	15	1.4	271.5	73.5	<0.05	Sig
		Group B	15	1	193.5			
		Total	30					
6.	Chest pain	Group A	13	0.66	12.5	6.500	<0.001	Sig
		Group B	15	0.8	23.5			
		Total	30					
7.	<i>Peenasa</i>	Group A	13	0.87	90.5	33.5	<0.001	Sig
		Group B	15	0.63	99.5			
		Total	30					
8.	<i>Chardi</i>	Group A	13	0.5	5	2	<0.001	Sig
		Group B	15	0.5	5			
		Total	30					

Table No: 2
Intergroup comparisons of objective parameters

S.NO	Objective Parameters	Group	No of Pt	Mean	SD	SE	t-Value	P-Value	Result
1.	TLC	Group A	15	353.333	364.234	94.045	1.036	0.309	Significant
		Group B	15	226.667	302.90	78.21			
		Total	30						
2.	Nutro	Group A	15	1.000	3.443	0.889	0.923	0.364	Significant
		Group B	15	-0.2333	3.863	0.997			
		Total	30						
3.	Lympho	Group A	15	0.267	3.348	0.864	-1.448	0.159	Significant
		Group B	15	2.593	5.245	1.354			
		Total	30						
4.	Eosino	Group A	15	1.600	0.736	0.190	0.707	0.485	Significant
		Group B	15	1.307	1.428	0.369			
		Total	30						
5.	Mono	Group A	15	0.147	0.280	0.0723	0.131	0.897	Significant
		Group B	15	0.133	0.279	0.072			
		Total	30						
6.	Baso	Group A	15	0.0333	0.377	0.097	-0.299	0.767	Significant
		Group B	15	0.0667	0.209	0.054			
		Total	30						
7.	AEC	Group A	15	32.200	19.135	4.940	1.211	0.118	Significant
		Group B	15	24.667	14.646	3.782			
		Total	30						
8.	ESR	Group A	15	0.733	0.883	0.228	0.676	0.505	Significant
		Group B	15	0.467	1.245	0.322			
		Total	30						

Results on objective parameter

Haematological parameters like TLC, AEC, Eosinophil count, Neutrophils, ESR play an important role in cough. The increase in eosinophils suggests increasing activation of allergic response. Lymphocytes counts in peripheral blood were not related to any respiratory symptom or diagnosis. There was no evidence of a relation between neutrophil counts and either atopy or airway responsiveness. In both groups, ESR and AEC were statistically highly significant ($p < 0.001$). In the group, A & B other parameters are statistically significant. [Table 2]

The overall effect of therapy

In group A, 66.66% of patients observed complete remission, while 6.66% of patients got excelled improvement, 20% got marked improvement, and 6.66% got moderate improvement in this group. In group B, 40% of patients attained complete improvement, 20% got excelled improvement, 26.66% got marked improvement, 6.66% patients

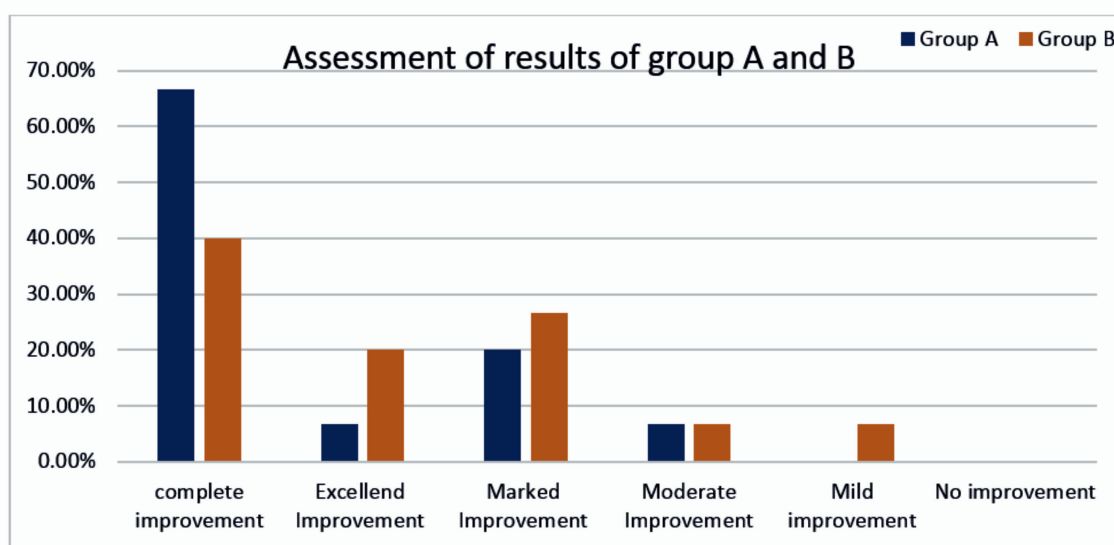
got moderate improvement, and 6.66% patients attained mild Improvement.

Discussion

Kaasa is hazardous disease in which *kapha* and *vaata* are excessively increased with *rasa* and *annavaha-sroto dusti*^[17]. Hence, the treatment should control *kapha* and take care of vitiated *vaata*. So, in this study of Srngyaadi Leha and Srngyaadi Syrup were used which acted on the *sampraapti-vighatana* (etiopathogenesis) of *kaphaja kaasa*. In group A (Srngyaadi Leha) it had the highest proportion of all active biological ingredients as a drug is consumed in *Leha*, without any changes to modify the way of intake, hence it has got maximum results. Group B (Srngyaadi Syrup) it was found less effective, may be because some active constituents were destroyed due to the administration of heat in preparation. It gave relief in symptoms of chest pain; character of cough and *ghana kapha* was found effective in new cases with a recent origin of disease.

Figure 1

Based on relief overall effect of Group, A > Group B respectively which can be justified as:



The results of this study show that '*Leha*' provides a more efficacious treatment of this disease as compared to syrup. It could be because of the retention of all the bioactive components of the drug, specifically the non-polar ones, which is not possible in syrup form however, the consumption of *Leha* as a whole help in overcoming these drawbacks.

Probable mode of action

Karkatasrangi, *Ativisha* and *Musta* are well reported for their antimicrobial^{[18], [19]} activity, whereas honey is a bio availability enhancer. All the contents of Srngyaadi Choorna have *ushna*, *kapha-vaataghna* and *kaasa-hara* properties for the management of *kaasa* and other inflammatory conditions of the respiratory system. This helps internally by increasing the elasticity of lung tissue. Also, *kaphaghna* and *kapha-nissaaraka guna* will help in clearing blocked channels, i.e., *srotorodha* and *vaataanulomana* will be achieved so that the *kupita vaata* will attain its *samyak* state and there will be relief in the symptoms of *kaasa*. These all ingredients are *katu*, *tikta* and *kashaya rasa-pradhaana*, acting over *kapha-dosha* and thereby restoring the normal function of *aamaasaya*, which is the

adhisthana of this *vyaadhi*, thus decreasing the episodic recurrence of the illness and providing long term relief to the patient. All these characteristics made these drugs act on *praana*, *udaka* and *anna vaha srotas* so, *sampraapti vighatana* occurs in a systemic manner starting from the *aamaasaya* where *deepana-paacana* and *agni-guna* of these drugs help in the *paacana* of *aama* in the body.

Most of the contents of honey are reported for their anti-allergic^[20], anti-inflammatory^[21] and anti-bacterial^[22] properties. Having *madhura*, *kashaaya-rasa*, *seeta-veerya*, *katu-madhura vipaaka*, and *kaphavaata-saamaka*^[23] properties of honey seem to be quite effective in antagonizing the *kaasa roga*, which is a *kaphavaata pradhaana* disease. Honey possesses the *kapha vaata saamaka* property and has *kaasa-hara* property also. The elimination of *kapha* releases the obstruction and free flow of *praana-vaayu* will be revealed in the form of improvement. Here the administration of honey relieves inflammation.

The pharmacological studies already reported on the individual drugs also favour the effectiveness

of various contents of *Srngyaadi coornam* and honey in *kaphaja kaasa*.

Conclusion

In the present clinical study, regarding group A, highly significant result was found in all subjective parameters, whereas in group B statistically significant result was found. The effect of both drugs on blood picture was significant on the parameters of TLC, DLC, ESR, and AEC clinically and statistically, *Srngyaadi Leha* showed more effective results than that of *Srngyaadi syrup*. We can conclude that these treatments are safe and effective in the management of *kaphaja kaasa*.

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References

1. Tripathi I, *Commentary Vaidyaprabha on Chakradatta of Chakrapani Dutta*, (1st ed.). *Balarogadhikaara*: Chapter 67, Verse 27, 396. Chaukhamba Sanskrit sansthana, Varanasi, 2005.
2. Agnivesa, *Caraka samhita*, edited by Pandit shastri K., *Chikitsa sthaanam*, 2nd Edition, 18/3-31, P534, Chaukhamba Bharti Academy, Varanasi, 2005.
3. Shastri A, *Ayurveda tatva sandeepika commentary on Susruta samhita* of Maharishi Susruta, Uttara tantra chp 25, P. 495. Chaukhamba Sanskrit sansthan, Varanasi, 2009.
4. Tripathi R, *Saroj Hindi commentary on Ashtanga sangraha*, written by Vriddha Vagbhatta, *Nidana sthaana* 3, p 358-359, Chaukhamba Sanskrit Pratisthan, Delhi, 2005
5. Gupta, *Vidyotini Hindi commentary on Ashtanga-hridaya*, written by Vagabhatta, *Nidaana sthaana* 3, P. 311-312, Chaukhamba Publication, Varanasi, 2016.
6. Rakshit V. K. D. *Madhukosha Sanskrit commentary on Madhava Nidaana*, written by Madhavakara, *Kaasanidaanam*, chp 11, p 303, Chaukhamba Prakashan, Varanasi, 2007.
7. Agnivesa, *Caraka samhita*, *Nidaana Sthananam* 8/ 17-18, P 666, 2nd Edition by Pandit Shastri K., Chaukhamba Bharti Academy, Varanasi, 2005.
8. Ghai OP, Normal growth and its disorders, *GHAJ Essential Pediatrics*, 27th Edition by Ghai OP, Vinod KP, Arvin B, CBS Publishers, New Delhi.
9. Thomson F, Masters IB, Chang AB. Persistent cough in children — overuse of medications. *J Paediatr Child Health* 38: 578-58.1, 2002
10. Cornford CS, Morgan M, Ridsdale L, why do mothers consult when their children cough? *Fam Prac*, 10: 193-196, 1993.
11. Anonymous, World Health Statistics, p.107, Geneva, World Health Organization, Retrieved from, www.who.int, accessed on 22/09/2013.
12. Leder K, Sinclair MI, Mitakakis TZ, et al. A community-based study of respiratory episodes in Melbourne, Australia. *Aust NZ J Public Health*, 27: 399-404. 2003.
13. Srivastava S. *Saarnghadhara Samhita*, *Madhya Khanda, Coorna Kalpana*, Verse 1-3, p 173. , 4th edition, Chaukhamba Orientalia, Varanasi, 2005.
14. Tripathi I, *Vaidyaprabha commentary on Chakradatta of Cakrapani Dutta, Balarogadikara*: Chapter 67, Verse 27, 396, 1st edition, Chaukhamba Sanskrit Sansthan, Varanasi, 2005.
15. Srivastava S. *Sarngadhara samhita*, *Madhya Khanda, Kwatha Kalpana*, Verse 1-3, p 135. Chaukhamba Orientalia, 4th edition, Varanasi, 2005.
16. *Indian Pharmacopoeia*, The Indian pharmacopoeia commission, Ghaziabad Ministry of Health and Family Welfare, Government of India, 2007.
17. Chaturvedi G.N, Sastri K.N, *Vidyotini Hindi commentary on Carakasamhita of Maharishi Agnivesa, Chikitsa Sthaana, Kaasahikitsaadhaya*; verse no 1-191, page no. 531-555. Chaukhamba Bharti Academy Varanasi .2005.
18. Ahmad M, Norditerpenoid alkaloids from the roots of *Aconitum heterophyllum*, Wall with anti-bacterial activity, *Journal of Enzyme Inhibition and Medicinal Chemistry*, 23:6, 1018-1022.
19. Ahmad M, Analgesic, anti-microbial and cytotoxic effect of *Cyperus rotundus* ethanol extract, *Pakistan Journal of Pharmacology* Vol.29, No.2, July, pp.7-13, 2012.
20. Shadkam MN, Mozaffari-Khosravi H, Mozayan MR, A comparison of the effect of Honey, dextromethorphan, and diphenhydramine on nightly cough and sleep quality in children and their parents, *J Altern Complement Med*. Jul, 16(7):787-93, 2010.
21. Pourahmad and Sobhanian, Annie Knight, The therapeutic effects of Honey, *The Plymouth Student Scientist*, 6, (1), 376-385 2013.
22. Montra S. *Antimicrobial and antioxidant properties of honeys produced by Apis mellifera*, *Journal of Api Product and ApiMedical Science* 2 (2).77-83, 2010.
23. Anonymous, *Dravyaguna API*, Part 1, Vol 6, Page no. 249, Government of India, Ministry of Health and Family, Welfare, Department of AYUSH, 2007.