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ROLE OF *SHRINGYADI CHURNA* IN *KAPHAJA KASA* IN CHILDREN WITH SPECIAL REFERENCE TO RESPIRATORY TRACT INFECTIONS

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ABSTRACT

Background: *Kasa* is a very common ailment of *Pranavaha Srotas* which occurs due to vitiation of *Kapha* and *Vata doshas*. It can affect any age group or sex but is more prevalent in children. As childhood is *Kapha Dosha Pradhana Kala*, children are more prone to develop *Kaphaja Kasa*. The ancient *Acharyas* developed various *Ayurvedic* formulations after continuous study, experiments, observations, and judgments. *Shringyadi Churna* is one of the formulations, mentioned in the *Bhaishajya Ratnawali* under *Balaroga Chikitsa Prakarana* has been chosen for the present study. **Aims and Objectives:** To evaluate the efficacy of *Shringyadi Churna* in *Kaphaja Kasa* and to study the adverse reactions of the drug, if any. **Material & Methods:** A total of 50 Patients were registered between the age group of 01-05 years with symptoms of *Kaphaja Kasa*. The drug *Shringyadi Churna* was administered in a daily dose fixed as per "Young's Rule" along with honey. The duration of the trial was 20 days. The effect of the therapy was assessed based on Subjective and Objective criteria. **Statistical Analysis Used:** Wilcoxon signed rank method was used to check the significance of subjective criteria & Paired t-test was used for the assessment of objective criteria. **Results:** *Sringyadi* Churna provided relief in all symptoms of *Kaphaja Kasa* and on all parameters. No patient has reported any adverse drug reactions during the treatment and follow-

up period. **Conclusion:** *Shringyadi Churna* is effective in managing the patients of *Kaphaja Kasa* due to its *Kapha-Vatahara, Kapha Chhedana, Deepana, Pachana,* and *Vatanulomaka* properties.

Keywords: *Kaphaja Kasa,* Respiratory infections, *Shringyadi Churna, Ayurveda,* Children.

INTRODUCTION

Respiratory illnesses have become more prevalent these days. Decreased immunity and non-adaptability against environmental stimuli play a major role in developing respiratory problems.[1] respiratory diseases are well-defined clinical conditions in modern medical science under the heading of Respiratory tract disorders. Children due to their specific anatomical and physiological peculiarities and immature immune response are more susceptible to these complaints. In developing and even developed countries pediatric Outdoor Patients Department (OPD), respiratory tract complaints account for nearly 50% of cases.[2]

Kasa is a disease explained in Ayurveda which can be correlated with acute inflammatory conditions of the respiratory system such as Upper Respiratory Tract Infections along with cough with expectoration. It can affect any age group or sex but is more prevalent in childhood. As childhood is *Kapha Dosha Pradhana Kala* children are more prone to develop *Kaphaja Kasa*. In *Kaphaja Kasa* the various etiological factors aggravate *Kapha Dosha* which leads to obstruction of *Vata Dosha* thereby causing the manifestation of *Kaphaja Kasa*.[3] The management of *Kasa* is challenging for a pediatrician as recurrent attacks happen. Recurrence can impact day-to-day activities and the overall growth of the child. So, it is one of the most common reasons for which parents seek medical attention for their child. In the contemporary system of medicine, Antibiotics, antihistamines, bronchodilators, expectorants, etc. are generally used. Although they are effective in providing symptom relief, there is no conclusive evidence that they shorten the duration of symptoms. Non-judicious use of antibiotics and corticosteroids leads to suppressions of host immunity and gives birth to antibiotic-resistant traits of the pathogen. According to a study, approximately 20 to 35% of *S. pneumoniae* isolates in the United States are now resistant to penicillin and other classes of antibiotics.[4] The Food and Drug Administration (FDA) issued an advisory statement warning against using over-the-counter medications for URTIs in children below two years of age.[5] Ayurveda has many drugs that act on the respiratory system and must be explored for their therapeutic effect in *Kasa*. *Shringyadi Churna* is one of the formulations, mentioned in the *Bhaishajya Ratnawali* under *Balaroga chikitsa Prakarana* has been chosen for the present study.[6]

AIMS & OBJECTIVES:

- To evaluate the efficacy of *Shringyadi Churna* in *Kaphaja Kasa.*
- To study the adverse reactions of the drug, if any.

MATERIAL & METHODS:

Selection of Patients:

A total of 50 patients fulfilling the inclusion criteria were selected from O.P.D of *Kaumarbhritya* Department, Rishikul Campus, Uttarakhand Ayurved University for the purpose of clinical trial of the present study. Informed consent of the parent/guardian has been taken prior to the inclusion of the patient in the trial.

Inclusion Criteria:

- Age: 1-5 years of either sex
- Children have signs and symptoms of *Kaphaja Kasa.*

Exclusion Criteria:

- Below the age of 1 year and above 5 years.
- *Kasa* other than *Kaphaja Kasa.*
- Known cases of Pneumonia, Diphtheria, Pertusis.
- Associated with systemic illnesses such as Tuberculosis, HIV, etc.

Method of Study –

Study Design: Open labelled clinical trial

- Single group: Patients receiving the *Shringyadi Churna* with *Madhu* (Honey).

Composition of *Shringyadi Churna*: *Karkatashringi, Musta & Ativisha*.

Plan of intervention:

- **Dose:** 400-3500 mg in three divided doses, Fixed according to young's rule (Child age / Child age + 12) Adult dose
- ***Anupana:*** *Madhu*
- **Duration of treatment:** 20 days
- **Follow-ups:** Four follow-ups each at the interval of five days. The first, second, and third follow-ups were with medicine and the fourth follow-up was without medicine.

Assessment Criteria:

The effect of the therapy was assessed on the basis of Subjective and Objective criteria.

- **Subjective Criteria:** Severity of Cough, Time of occurrence, Severity of Bouts, *Kapha Nishteevana*, Disturbance in sleep, *Peenasa, Shirashoola, Utklesha*
- **Objective Criteria:** Total Leukocyte Count (TLC), Differential Leukocyte Count (DLC) – Neutrophils, Lymphocyte, Eosinophils & Monocyte, Erythrocyte Sedimentation Rate (ESR), Absolute Eosinophil Count (AEC)

Statistical Analysis:

The observed data were subjected to appropriate statistical analysis for testing the statistical significance. Wilcoxon signed-rank test was used to check the significance of subjective criteria & Paired t-test was used for the assessment of objective criteria.

The results were interpreted at *P <0.05 & 0.01*, *P <0.001* and *P >0.05* significance levels. The obtained results were interpreted as: Not significant *P >0.05*, significant *P <0.05 & 0.01* and highly significant *P <0.001*.

Criteria for assessment of Overall therapy:

The result obtained from the individual patient was categorized according to the following grades:

- **Complete improvement:** 100% relief in complaints
- **Marked improvement:** >75% relief in complaints
- **Moderate improvement:** >50-75% relief in complaints
- **Mild Improvement:** 25-50% relief in complaints
- **Unchanged:** <25% relief in complaints

Ethical Clearance:

This trial has been cleared by Institutional Ethics Committee, **vide Ref- UAU/RC/IEC/2021/1-53** dated **02/07/2021.**

Registration of CTRI:

The present clinical trial has been registered in the Clinical Trials Registry – India (CTRI). The registration number is **CTRI/2021/08/035375 [Registered on: 03/08/2021] – Trial Registered Prospectively.**

RESULTS:

A total of 50 patients of *Kaphaja Kasa* were registered for the present study out of which 08 patients discontinued the trial before completion of their full course of treatment. A total of 42 patients have completed the course of therapy.

Effect on Subjective Parameters:

Shringyadi Churna provided 75.80% in Severity of Cough, 72.90% in Time of occurrence, 72.41% in Severity of Bouts, 87.57% in *Kapha Nishtheevana*, 88.88% in Sleep disturbance, 87.01% in *Peenasa*, 94.74% in *Shirashoola* and 85.71% in *Utklesha*.

Table 01: Showing Effect of *Shringyadi Churna* on Subjective Parameters

Parameter	N	Mean BT	Mean AT	D	% Of relief	SD	SE	W	P	Significance
Severity of cough	42	1.86	0.45	1.41	75.80	0.5	0.08	-903.000	<0.001	**HS**
Time of occurrence	42	2.62	0.71	1.91	72.90	0.82	0.13	-820.000	<0.001	**HS**
Severity of Bouts	42	1.74	0.48	1.26	72.41	0.63	0.10	-741.000	<0.001	**HS**
Kapha Nishteevana	42	1.69	0.21	1.48	87.57	0.55	0.08	-861.000	<0.001	**HS**
Sleep Disturbance	21	1.71	0.19	1.52	88.88	0.81	0.18	-210.000	<0.001	**HS**
Peenasa	35	1.54	0.20	1.34	87.01	0.48	0.08	-630.000	<0.001	**HS**
Shirashoola	15	1.33	0.07	1.26	94.74	0.46	0.12	-120.000	<0.001	**HS**
Utklesha	15	1.4	0.2	1.2	85.71	0.56	0.14	-105.000	<0.001	**HS**

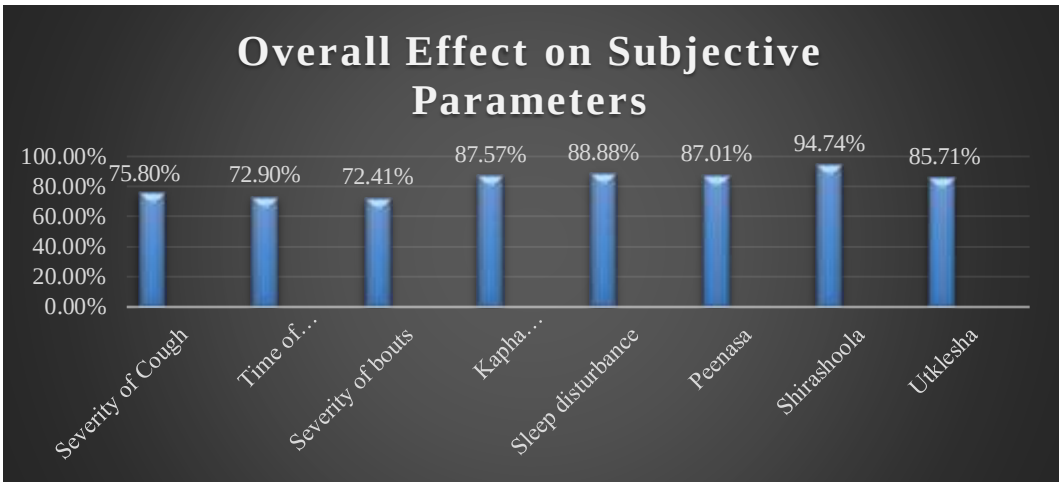

Figure 1: Showing Overall Effect on Subjective Parameters

Effect on Objective Parameters:

The trial drug showed statistically highly significant results on Objective parameters – Total Leukocyte Count (TLC), Eosinophil, Absolute Eosinophil Count (AEC) & Erythrocyte Sedimentation Rate (ESR). It showed statistically significant results on parameters – Neutrophil and Lymphocyte. The effect on Monocyte was statistically not significant.

Table 02: Showing Effect of *Shringyadi Churna* on Objective Parameters

Parameters		Mean BT	Mean AT	D	% Of Relief	SD	SE	t	P	Significance
TLC		7951.74	7032.74	919	11.56	272.86	42.10	21.827	<0.001	**HS**
DLC	N	52.74	50.94	1.8	3.41	4.6	0.71	2.537	<0.05	**S**
	L	34.97	33.75	1.22	3.49	2.48	0.38	3.197	<0.05	**S**
	E	4.89	4.07	0.82	16.76	0.74	0.11	7.107	<0.001	**HS**
	M	3.45	3.48	-0.03	-0.87	0.13	0.02	-1.274	>0.05	**NS**
AEC		372.68	331.68	41	11.0	27.85	4.3	9.538	<0.001	**HS**
ESR		15.58	12.79	2.79	17.90	2.15	0.33	8.419	<0.001	**HS**

(TLC- Total Leucocyte Count, DLC- Differential Leucocyte Count, N- Neutrophil, L- Lymphocyte, E- Eosinophil, M-Monocyte, AEC- Absolute Eosinophil Count, ESR-Erythrocyte Sedimentation Rate, S- Significant, HS- Highly Significant, S-Significant, NS- Not Significant, BT- Before Treatment, AT- After Treatment, D- Difference, SD- Standard Deviation, SE- Standard Error)

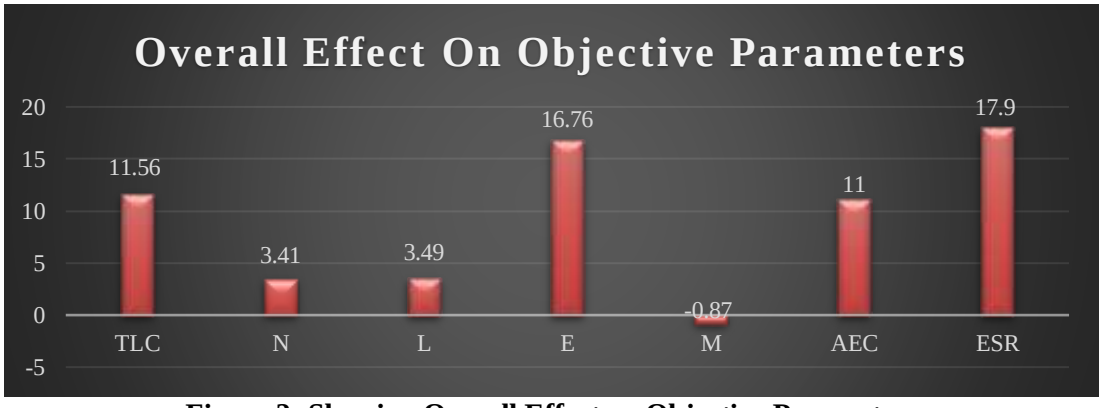

Figure 2: Showing Overall Effect on Objective Parameters

Overall Effect of Therapy:
In the present study, Complete improvement was found in 22 (52.38%) patients, marked improvement was found in 03 (7.14%) patients, Moderate improvement was found in 13 (30.95%) patients and Mild improvement was found in 04 (9.52%) patients.

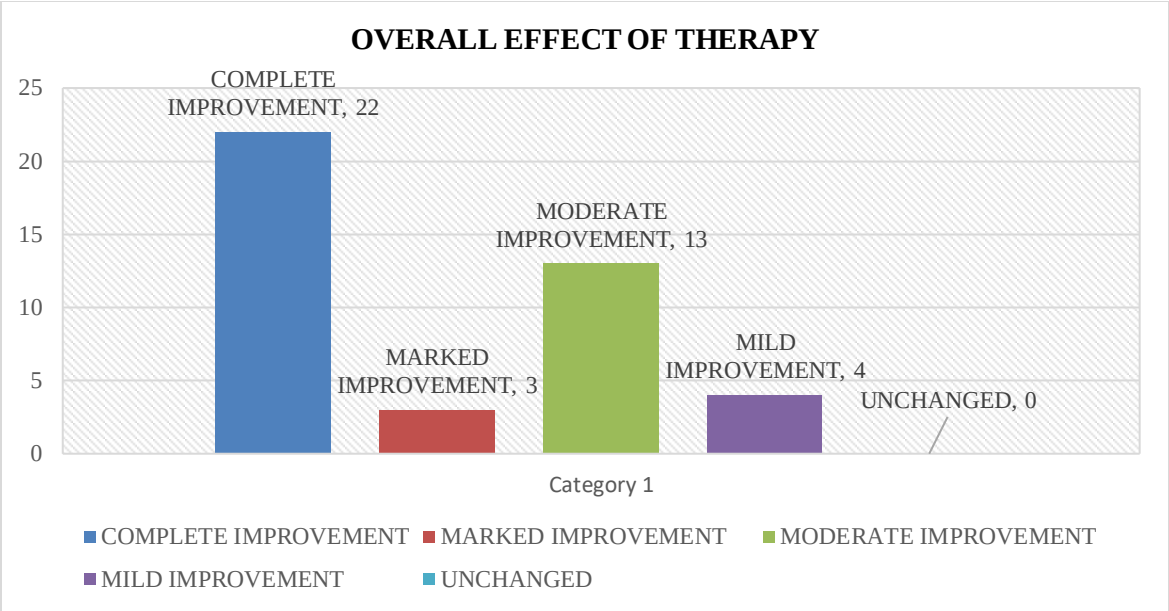

Figure 3: Showing Overall Effect of Therapy

DISCUSSION

1. **Age**: Age group 1-5 years has been included in the present study as the condition is more prevalent among them. A maximum of 60% of patients were from the 4-5 years of age group followed by 1-3 years (40%). In this study, we found that the children in the age group 4-5 years were more prone to develop Upper respiratory tract infections as they are more susceptible to infections from play schools, schools, and unhygienic eating habits.
2. **Sex:** In the present study, the maximum number of patients were male (52%), and 48% of patients were female. The study showed slightly more prevalence in the male sex. This may be due to the small sample size.
3. **Religion:** Maximum patients i.e., 82% were from Hindu religion whereas only 14% of patients were Muslims and 4% were Sikh. As the population of Hindus is high in this geographical territory, it is obvious that Hindu patients were found more in numbers.
4. **Habitat:** During this study, it has been found that a maximum number of patients i.e., 56% were from urban areas followed by 44% from a rural areas. This may be due to overcrowding in urban area where infections spread easily due to congested populations.
5. **Socio- Economic status:** The majority of the patients i.e., 42% were belonging to the poor sector of society followed by the lower middle class 36%, and the middle class 22%. Socio-economic status has an effect on a child's immunity. Poor economic status can lead to poor immunization and inadequate diet.
6. ***Deha Prakriti*:** *Kaphaja Kasa* was found to be common in patients having ***Kapha pradhana Vata Anubandhita*** *Deha prakriti*. *Kasa* is a disease in which *Vata* and *Kapha doshas* play a vital role in *Samprapti* of the disease, thus the person having *Kapha-Vata prakriti* is more prone to develop *Kaphaja Kasa.*
7. **Diet:** Maximum numbers of patients were consuming *Madhura Rasa* dominant food articles (76%), followed by *Lavana Rasa* (70%), *Amla*

Rasa (44%), and *Katu Rasa* (12%) dominant diet. There is a natural tendency of a child towards *Madhura Rasa*. Childhood itself is a *Kapha Dosha* dominant age and excessive intake of *Madhura, Amla,* and *Lavana Rasa* cause vitiation of *Kapha Dosha* which is the main *dosha* of *Kaphaja Kasa.*

PROBABLE MODE OF ACTION OF DRUG:

- The trial drug *Shringyadi Churna* consists of three herbs with multi-dimensional properties. The drugs which directly act on the disease *Kasa* (such as *Karkadasringi*) act by their *Kapha – Vatahara* properties.
- *Teekshna guna* of the drug acts locally at the site of *Kantha* and causes *Vilyana* of obstructed *Kapha*. *Madhu* acts as media and due to its *Yogavahi* and *Sukshma guna* carry the drug effects to deep *Srotas* which is helpful in digestion of *Sama Kapha*. Thus, immediately after the removal of *Srotorodha, Vatahara* drugs such as *Karkatashringi* and *Ativisha* cause *Vatanulomana* and pacify *Vimargagamita Kupita Vata*.
- The drug with *Kapha-Pittahara* properties (such as *Musta* and *Madhu*) comes into action when there is an association with *Pitta dosha.*
- The drugs such as *Karkatashringi, Madhu,* etc. with *Kashaya rasa* have local *Kaphahara* action on the mucosa. This process explains the symptomatic relief from *Kasa*.
- In the later phase, the drugs like *Musta* and *Ativisha* do the action of *Pachana* and *Deepana*. *Deepana – Pachana* process normalizes *Vatakarma viz. Anulomana*.
- From a modern perspective, the drugs with pungent taste such as *Karkatashringi* act as local counter irritants probably by blocking the vagal sensory afferent. When administered along with honey, additional demulcent and mucokinetic actions further enhance the antitussive action.
- The drug has systemic antiviral and antimicrobial actions which help in controlling systemic infections. The immunomodulatory activity of the drug helps in eliminating the infection or regulating the allergic responses. In long term, these also enhance immunity as a whole and prevent recurrence of the disease.

CONCLUSION

- *Kaphaja Kasa* is a disturbing disease of *Pranavaha Srotas,* commonly seen in general practice and also common in children.
- As a disease, *Kaphaja Kasa* can be correlated with acute inflammatory conditions such as Upper Respiratory Tract Infections along with cough with expectoration but as a symptom, it completely correlates with cough reflex.
- As childhood is *Kapha Dosha Pradhana Kala* children are more prone to develop *Kaphaja Kasa.*
- In the present study, we found that various etiological factors aggravate *Kapha Dosha* which leads to obstruction of *Vata Dosha* and causes *Kaphaja Kasa*. *Pranavaha, Rasavaha* and *Annavaha Srotas* are involved in the *Samprapti* of *Kaphaja Kasa.*
- The trial drug *"Shringyadi Churna"* possesses *Kapha-Vatahara, Kaphachhedana, Deepana, Pachana,* and *Vatanulomaka* properties through which *Samprapti Vighatana* can be attained to cure *Kaphaja Kasa* and its associated symptoms.
- The prime factor for the production of the disease *Kaphaja Kasa* is *Sama Kapha* and the *Deepana – Pachana* properties of the drug help in the digestion of *Sama Kapha* by increasing the *Jatharagni* as well as *Rasagni* and *Bhutagni*.
- The overall effect of the drug was significant. The drug was well tolerated by children and there were no adverse effects reported during the trial.

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