

PHYSIOLOGICAL STUDY OF KASA IN CHILDREN AND EFFICACY OF MUSTADI YOG IN CHILDREN SUFFERING FROM DISEASE KASA: A CASE STUDY**Dr. Sanjivani Tukaram Hambarde*¹ and Dr. Pravin Dadarao Kadam²**¹Assistant Professor, Kriyasharir Department, Govt. Ayurved College Nanded, India.²Assistant Professor, Kaumarbhritya Department SSVP Ayurvedic College And Research Institute, Hatta, Hingoli, India.***Corresponding Author: Dr. Sanjivani Tukaram Hambarde**

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ABSTRACT

The aim of study was clinical, antibacterial evaluation of efficacy of Mustadi Yog in the children suffering from kasa. For clinical study 06 children of the age group of 5 year to 15 years were selected after evaluating them clinically for Respiratory allergic disorders RADs as per the inclusion criteria, from O.P.D. and I.P.D. of PG Department Kaumarabhritya, divided into two groups, group A (Trial group) received Mustadi Yog I and Group B (Control group) received Salbutamol in syrup duration of study was 14 days. Assessment was done using four point severity scale of clinical symptoms and laboratory assessment through Peak flow expiratory rate (PEFR), Blood investigations (Hb%, TLC, DLC, TEC) and good result in group A patient, treated with Syrup Mustadi Yog I. In itching of nose and eyes, highly significant improvement was seen in group A. On the other hand in group B all the outcomes were insignificant. The study drug Mustadi Yog I is effective in alleviating and reducing the morbidity score in Respiratory allergic disorders as compared to the previous morbidity history.^[1]

KEYWORDS: Ayurveda, Respiratory Allergy, Morbidity, Mustadi Yog.**INTRODUCTION**

Allergy is a hypersensitivity disorder of the immune system of the human body. Allergic reactions occur when a person's immune system reacts abnormally to normally harmless substances, present in the environment. Respiratory allergy is the commonest illness during childhood and often abating with age. As cough is the most frequent symptom of respiratory diseases in which majority patients having recurrent cough as the manifestation of recurrent respiratory disease. In classics, descriptions of disease Kasa clearly correlate with cough and its Pathophysiology exactly correlates with the mechanism of cough reflex. Poor housing, fire-wood, coal, cooking in open, sanitary condition are causes of respiratory infections in rural India while in urban area pollution from industry, vehicles, tobacco smoke, exposures to air, exposure to allergens have been correlated with airway hyperactivity. The therapy of Respiratory allergy usually employs H1-antihistamines, Bronchodilators, Leukotriene Inhibitor, corticosteroids and immunotherapy. The long-term use of these, however may not limit the disease progression and further all of these drugs have adverse effects and thus search for a novel drug continues. Kasa is the most frequently encountered problem in the Balyavastha

(Pediatric age). Since Kapha is the main culprit in production of Kasa(cough) and Kapha Dosha is dominating in Balyavastha, the incidence is more in this age group.^[2] Early intervention is necessary in case of Kasa as it may produce Kshaya (Tuberculosis).

Also it is important to treat any Balaroga at the earliest as it may hamper the proper Vriddhi (Growth and development) of child which is clearly described by Charaka, that Avighata (non obstruction) as Shareera Vriddhikara Bhava (i.e. Vighata hinders Shareera Vriddhi). Thus in the present work Kasa was taken as the subject of intervention with drug Mustadi Yog.^[3]

AIMS AND OBJECTIVES

Physiological Study Of Kasa In Children And Efficacy Of Mustadi Yog In Children Suffering From disease Kasa: A Case Study.

MATERIAL AND METHODS

Total number of 06 patients were registered from the O.P.D of Kaumarbhritya /Bal- Roga, O.P.D after proper screening on the predesigned proforma. The cases were selected on the basis of following exclusion and

inclusion criteria.

Table 1: Division of the patients into groups.

Group	Drug	No. of patients
A	Trial drug	03
B	Placebo	03
Total	06

Consent: A voluntary, signed, witnessed consent/assent was obtained from the participant/ parent's/Guardians prior to the start of clinical trial.

Inclusion criteria

- Age between 5yr to 15 years.
- Case of productive and dry cough.
- Case of acute or chronic cough.
- Associated with or without blood.
- Pain in chest present or absent.
- Occasionally vomiting.
- Not associated with life threatening disease.

Exclusion criteria

- Sign of severe dehydration or shock
- Not accepting orally
- Suffering with any severe systemic disease e.g. septicemia, meningitis associated with diarrhea, high grade fever.
- Age less than 5 yr and more than 15 years
- Persistent vomiting, huge distension of abdomen, severe abdominal pain

Drug & Placebo - The trial drug (Mustadi Yog I) was used in the form of syrup in order to enhance its palatability for easy administration to children. It was prepared by the Pharmacy. The placebo for the study was also in the form of syrup (salbutamol syrup) composed of sugar with similar appearance and presentation as that of trial drug.

Dose - The trial drug and placebo were prescribed in doses according to body weight of children (1ml/kg/day) in 2 or 3 divided doses. **Duration**- The trial drug and placebo were administered for 14 days.

Assessment criteria: Assessment of clinical symptoms – Nasal discharge, loss of smell, sneezing, nasal obstruction, headache, hoarseness of voice, fever, dyspnea, itching (nasal/eye), wheezing, cough and throat inflammation.

Collection and Preparation of medicines: This study has been done to evaluate the effect of 'Mustadi Yoga' in Kasa. It includes -Ativisha, Karkatshringi, Musta, Pippali and Vasa. The study drug Mustadi Yog was selected from Yog Ratnakar-Bal Rogadhikar, Kasa Chikitsa11. The plant was identified and authenticated 1. Pistacia integerrima Stewart ex Brandis- Anacard. Cyperus rotundus L.- Cyper. Piper longum L. – Piper. Aconitum heterophyllum Wall. Cat.- Ranun. Adhatoda vasica Nees - Acanth. The idea to have trial of the drugs in syrup

form is for pediatric age group only.

Management In the clinical study: following drugs were selected based on the reference of ancient Ayurvedic literature as well as modern science. • Syp. Mustadi Yog given in 8-10mg/kg/dose thrice in a day. • Syp. Salbutamol (2mg/5ml) given in 0.1-0.4mg/kg/dose thrice in a day. To assess the effect, drugs were given randomly to the patients, without selection of patients on the basis of Features.

Follow up: Every effort was made to get information from the patient's nearest attendant of each group at each follow up. They were asked for first follow up on day 7th and 2nd follow up on day 14th. On each follow up, complete clinical examination of patient was done. Patients were asked also for the improvement in cough characteristics and clinical features. Finally, the findings were noted on the proforma. Assessment of improvement.

Assessment of improvement: in condition Assessment in improvement or deterioration in cough is done by the scoring system. 1. Subsidence of the clinical signs and symptoms. 2. Absence of recurrence during follow-up. 3. Changes in general health conditions. 4. Changes in haematological parameters. A special scoring pattern was devised to assess the overall effect of therapy incorporating both subjective and objective parameters. Each symptom/sign was given a grading in increasing order of severity. Evaluation for recurrence of the signs and symptoms of Kasa, general health status and systemic examination were conducted during the follow up period.

Methods

Children lying under the inclusion criteria were thoroughly examined by general physical examination, complete history was taken and the children with problems/ factors in exclusion criteria were excluded. Detailed information about the diagnosed children was recorded in a proforma prepared on the basis of Ayurveda as well as modern parameters. Information included history of any infections disease in the past, perinatal history, family history, history of other allergic diseases, history regarding risk factors for respiratory allergy, history of previous episodes, social, cultural and economic status, behavioral disturbances, satva, sara, satmya, samhanana and other Ayurvedic parameters.

Table 2: Ingredients of trial drug (Mustadi Yog 1).

Sr	Name	Botanical Name	Parts used	Ratio
1	Musta	Cyperus rotundus	Root	01 part
2	Ativisha	Aconitum hetrophyllum	Root	01 part
3	Karkat shrungi	istacia Intergrima	Gall	01 part
4	Pippali	Piper longum	Fruit	01 part
5	Vasa	Adhatoda vasica	Whole plant	01 part

OBSERVATION AND RESULT

Study showed that, 7-11 years age group was the most affected group. Males were more prone to RADs as compared to females. Maximum numbers of cases were belonging to urban area and middle socio-economic status. Maximum number of cases exhibited seasonal manifestation. Hereditary influence and atopy is evident in RADs. The provocation factors observed were dust, smoke, cold air, cold season, cold water, ice creams, seasonal changes, cloudy weather, spicy food, oily food, sour food items sunlight, physical stress, and mental stress. Associated complaints found are snoring, serous otitis media, tonsillitis and migraine. The characteristic behavior and appearance were observed in the form of allergic shiners, allergic salute, nasal crease, allergic gape and allergic cluck. Kapha Vata Prakriti patients were found to be more prone for RADs. Maximum number of patients of the trial were under Mandagni (Loss of appetite). Statistical evaluations of clinical features showed good results in Group A treated with Mustadi Yog. Intra group comparison showed highly

significant result in dry cough, productive cough, sore throat, hoarseness of voice, breathlessness, blocking of nose and wheezing, dyspnoea.^[4] whereas significant improvement was seen in crepitation., highly significant result was seen in blocking of nose during first and second follow up, significant improvement was seen in wheezing after second follow up whereas in productive cough significant improvement was seen after treatment. not significant result found in dry cough, sore throat, hoarseness of voice, breathlessness and crepitation. Evaluation by laboratory parameter showed good result in group A, In phytochemical study, Out of the 8 phenolic standards used, Ativisha contained only one phenolic compound i.e. Shikimic acid whereas Musta and Pippali contained 5 compounds. Syringic acid was not detected in Musta and Quercetin was not detected in Pippali. Only two phenolic compounds i.e. Syringic and Cinnamic acids were detected in Karkatshrungi. Four phenolic compounds i.e. Shikimic acid, Gallic acid, Rutin and Ferulic Acid were detected in Vasa.

Table 3: Statistical presentation of overall improvement in various morbidity features after treatment in group A and group B.

Sr.no	Morbidity features	Group	Mean score	
			B.T	A.T
1	Nasal discharge	A	6.44	4.45
		B	6.28	6.11
2	Cough	A	4.88	3.22
		B	4.26	4.10
3	Headache	A	7.11	5.53
		B	7.32	6.89
4	Dyspnoea	A	5.58	3.12
		B	5.86	5.14

DISCUSSION

Kasa has been considered as a disease in Ayurveda with elaborate description of separate etiology, pathogenesis, premonitory symptoms, signs with symptoms and treatment. It is also considered as mere symptom of other diseases mainly the diseases of Pranavaha and Annavaha Srotas (Respiratory and Gastrointestinal system). The disease Kasa explained in Ayurvedic classics includes many of the upper and lower respiratory diseases as it is evident by the vast collection of signs and symptoms. The diseases of systems other than respiratory are dealt as the symptom Kasa described at the context of respective diseases. Since Kasa is a Vata -Kapha dominated disease, its incidence should be witnessed

more during the childhood, which is the normal time of Kapha dominancy. Balyavastha is Kapha dominant age group, so the incidence is found more in this age group. In addition to above data the description of the Samprapti (manifestation) of Kasa almost exactly correlates with the mechanism of cough reflex^{13,14}.

Thus beyond doubt, Kasa can be considered as 'Cough' in modern terms. Regarding Mode of Action of Trial Drug Respiratory allergic disorders or vitiation of pranavaha srotas (Respiratory System) mainly involves Pratishtayaya and Shvasaroga. As described earlier the dosha involved are Vata and Kapha. Dushya involved is rasadhatu and srotas affected are pranavaha, annavaha, and rasavaha. Thus the drug selected should have the

potency to act simultaneously on pranvaha, annavaha, and rasavaha srotas i.e., it should possess dipana, pachana, vatakapha shaman and srotoshodhaka properties.

For this action, the drug should be laghu, sukshma, ushna, teekshna in guna. The compound drug Mustadi Yog I is the combination of drugs having amapachaka (Pippali, Ativisha, Musta), rasayana (e.g. Pippali), vishaghna (e.g. Musta, Ativisha), sothahara (e.g. Pippali, Vasa) and shleshmahara (Vasa, Pippali, Ativisha, Musta, Karkatsringi) jwarahara (Vasa, Musta, Pippali) and, shulahara (Pippali, Ativisha, Vasa) properties. The Study drug is having katu and tikta rasa, laghu, ushna and teekshna guna and katu vipaka, ushna virya and Kapha Vata shamaka properties. It shows srotoshodhaka properties which may possibly assist to eliminate sluggish dosha in the srotas.

Katu and tikta rasa, Ushna virya and laghu, ushna, tikshna guna having the properties of kapha-vilayana, pachana, srotoshodhaka. Due to this liquification of kaphadosha takes place resulting in clearing of respiratory tract on coughing. Most of the drugs have Vata Kapha shamaka properties. Mustadi Yog I having a potential properties of alleviating both vata and kapha dosha by virtue of tikta, katu rasa and ushna virya, laghu tikshna and ushna quality. Thus, kaphashamaka properties of drug help in breaking the srothorodha and digestion of ama, which leads to proper functioning of the Agni.^[5]

Age group 5yr to 15 years has been included in the present study as the condition is most prevalent among them. Maximum number of patients in age group 3-5 years found as they are more susceptible for infections from play schools, schools and unhygienic eating habits. The male children tend to suffer more, since they have smaller airways for a given lung size, which is independently inherited in addition to the fact that boys have a higher incidence of respiratory infections during childhood. Maximum number of patients are from middle class family, where the child is pampered more and improper food habits like more of ice- creams, chocolates etc are given which lead to Nidanasevana (causative factors) and lead to recurrent health problems. Improvement in cough may be because of pacification of vata & kapha dosha and removal of obstruction from pranvaha Srotas.

CONCLUSION

In short, it can be concluded that Effect of Mustadi Yog was seems to be significant in reducing the symptoms of Kasa. i.e. it can be concluded that the study drug "Mustadi Yog" is effective in alleviating and reducing the morbidity score in RADs, as compared to the previous morbidity history. Post treatment follow up study showed that trial drug provides the long-term sustained relief. No adverse effect, of the trial drug was observed during the study.

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