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Management of Jirna Kasa (Chronic cough) in children with ayurvedic regimen a single case study

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Abstract
Kaumarbhritya is one of the famous branches that deals with *vyadhis* of children and their *chikitsa*, and when it comes to *vyadhis* the most predominant system of body which is affected is *Pranavaha Srotas*. Many children's usually suffer a lot when it comes to respiratory ailments. Many children and newborn died due to *Pranavaha Srotas* dysfunction i.e. respiratory illness, so their management needs a different approach. The most important cause of death of children below 5 years of age is pneumonia causing 18% of deaths below 5 years of age, also the morbidity of respiratory illnesses is roughly 70% 1. In developed countries, up to 25% children aged less than 1 years & 18% of children aged 1 to 14 years experience Recurrent Respiratory Illness 2 Respiratory illness like common cold, difficulty in breathing, cough, wheezing is most commonly present in children. It occurs because of airway inflammation & child airway is small and narrow, making it easy for them to fill & get blocked with mucus. Poor Immunity and recurrent infections are the major concern in children. Repeated infections and recurrence of any disease may adversely affect the physical and mental growth as well. Respiratory tract illness accounts for about more than 50% of patients attending Pediatric OPD. Available treatments like mucolytic, expectorant, bronchodilators and now the use of inhalers cannot completely cure the patient and frequent use of these drugs can cause many health hazards. Wheezing is a common clinical have had one episode of wheezing by 6 yr.

Keywords: Jirna kasa, pranavaha srotas, ayurvedic regimen

Introduction
In Ayurvedic classics *Kasa*, *Shwasa* and *Hikka* are three major diseases explained Under *Pranavaha Sroto-vikaras* (Respiratory Disorders). Due to their similarity in etiology, Certainly in pathology and treatment they Have been explained subsequently in classics.
Chronic bronchitis (*kasa*) having major Symptoms like *Kasa* (cough) and *Shwasakricchrata* (Breathlessness), it is Included under *Pranavaha Sroto Vikaras* (Respiratory disorders). Diseases of the Respiratory system account for up to a third of deaths in most countries
Early intervention is necessary in case of *Kasa* as it is a potential *Nidanarthakara Vyadhi* (disease having tendency to produce secondary diseases) to produce *Kshaya* [4]. (a disease characterized with severe emaciation). It is noted that children suffering from recurrent RTI exhibit significantly hampered growth and development (including intellectual and social up-gradation) [5]. Depending upon the duration of the symptoms the cough can be classified as acute, sub-acute or chronic if it persists for less than 3 weeks, 3 to 8 weeks or more than 8 weeks respectively. The etiology of cough is diverse and includes environmental as well as infective causes. Post nasal drip and post infectious cough are two commonest reasons for sub-acute to chronic cough [6]. The case study discussed here is of a 10 year female child, who had recurrent episodes of cough and frequently received treatment but, had temporary relief and relapses were frequent. Then he came to Ayurvedic OPD and was given an Ayurvedic regimen (i.e. *Sitopladi churna* along with *Shwaskuthar rasa*). The child had significant relief from signs and symptoms of recurrent episodes of chronic cough. The recurrence or the frequency of disease was found markedly reduced. Ayurvedic management proved to be beneficial in this case of recurrent respiratory illness.

2. Case Study
2.1 Aims and Objective: To evaluate the role of Ayurvedic Regimen in the management of recurrent (chronic) cough.

Material And Methods

Study design: Present study is a single case study conducted in the department of kaumarbhritya of CSSMS, Ayurved College, Aurangabad, and Maharashtra.

Case report: A 10 year old Female patient came to Kaumarbhritya OPD in CSMSS Ayurved Mahavidyalaya, Kanchanwadi, Aurangabad, and Maharashtra. With complaints of recurrent cough, sore throat, difficulty in breathing on and off and severity increases during winter season.

History of present illness: Patient was healthy before 1 and half year. But gradually she suffered with respiratory episodes in 1 and half year before and further that she had recurrent respiratory illness episodes start but cough worsened day by day. Recurrent episodes of –Cough, Dyspnoea, Running nose, Sore throat Associated complaints- Pallor ++

History of past illness: H/O Recurrent respiratory illness since last 2 years. An average of 2 to 3 episodes of Recurrent episodes of cough per month. No H/O any other major illness or any surgery.

Drug history: Frequent use of antibiotics, mucolytic/ bronchodilators, antihistamines drugs.

Family History: H/O Bronchial Asthma to Grandfather

Birth history: 1. Antenatal – nonspecific

Natal – Full Term Normal Delivery, at hospital, Baby Cried Immediately After Birth, birth wt. – 2.5 kg.
Postnatal – No H/O neonatal jaundice & seizure no H/O NICU Admission.

General Examination

Table 1: Show Built and Moderate

Built	Moderate
General appearance	Fair
Temp.	98.7 0F
Pulse	98/min
RR	30/min
Height	130cm
Weight	29.8kg

Physical Examination

1. Nadi - Kapahapradhan.
2. Mala -Sama mala.
3. Mutra – Samyakapravruti.
4. Jivha – Sama.
5. Shabda – Spashta.
6. Sparsha – Samshitoshna.
7. Druk – Mild pallor.
8. Aakruti – Madhyam.

Other examination – Agni – Agnimandya Koshtha– Mrudu.

Systemic Examination

Table 2: Pranvaha strotas parikshan

Darshan	Sparshan
(Inspection)-	(Auscultation)-
Shape of chest- Normal Chest retraction-No	RS - B/L Wheezes were audible, Air entry slightly diminished
Movement of chest-symmetrical	

CVS - S1S2 normally heard CNS - Conscious and Oriented

Diagnosis: Clinically on the basis of signs and symptom, CBC, Chest X-ray.

Treatment Plan

Table 3: First Line Treatment - *Deepan -Pachana*

Abhyantar Aushadhi	Total Aushadh Matra (7)	Sevankal 8	Kalavadhi (Duration)
Lashunadi Vati + Trikatu Churna	35 gm + 35 gm Mix with each other in the form of churna	Pratham kal(Suryoday Jatah) Sanyanbhojane Each kal given 3.5gm churna before meal	10 Days
Anupana	Ghrita		

Aahar –Yojana
During *Deepan -Pachan* period only advised to take *Varan* + *Bhat* along with *Ghrita.*

Water-warm water advised for drinking.

Table 4: Second Line Treatment – Ayurvedic Regimen

Abhyantar Aushadhi	Total Drug Matra (7)	Sevankala (8)	Duration
Yashtimadhu Churna Sitopaladi Churna	30 gm 75gm Mix with each other in the form of churna	Dwitiy kala (BhojanPaschat) Pancham kal (Nishi kala) In the form of churna after a meal. In divided doses **Each dose** =3.5gm of churna (total 7 gm in a day)	15 Days Repeated cycle for 3 times with a gap of 7 days after each cycle
Anupana	Madhu (Honey)		
Rasayan Chiktisa for Pranvah strotas			
a. Vasavaleha	150 ml	In the form of liquid 10 ml for total day (5 ml each dose) Sevenkala-As mentioned in above	15 days Repeated cycle for 3 times with a gap of 7 days after each cycle
b. Pippalyadi rasayan	1 tab daily with lukewarm water increased per day with half tab up to 10 days (5 tab daily at day 10th) and decreased accordingly with tapering dose. Like Vardhman pippali rasayana		2 months
Anupana	Lukewarm water equal quantity for each dose		

Table 5: Observation and result

Observation	Before Treatment	After Completion of regimen
Sore throat	++	-
Chronic Cough	+++	+
Rhinitis	+	-
Pallor	+++	+
Dyspnoea	+++	-
Weight	29.7kg	31.1kg
Anorexia	++	-

Table 6: Histopathology report

Investigations	Before Treatment	After Treatment
TLC	10100/cu mm	8000/cu mm
DLC		
Neutrophils	77%	65%
Lymphocytes	18%	26%
Eosinophils	02%	03%
Monocytes	03%	05%
Hb%	10.8 gm%	13gm%
ESR(Westergreen)	60 mm /hour	26 mm /hour
AEC	480/L	330/L
S.G.O.T	21 IU/L	19 IU/L
S.G.P.T	32 IU/L	17 IU/L
Alkaline phosphatase	96 IU/L	84 IU/L

Radiological Findings – Chest X ray PA view

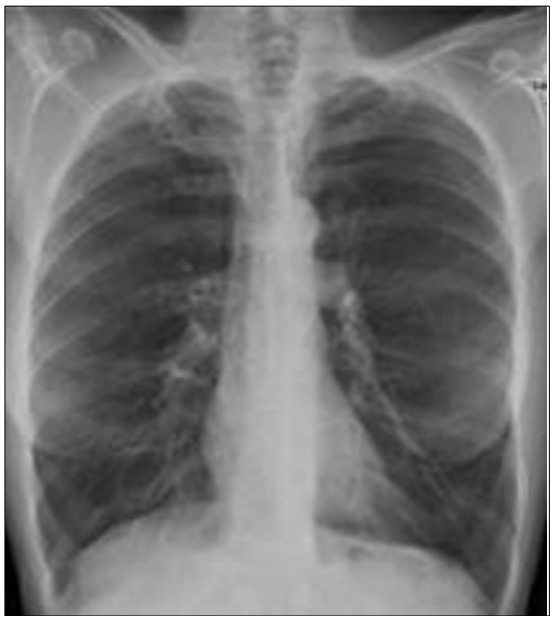

Image 1: Before Treatment

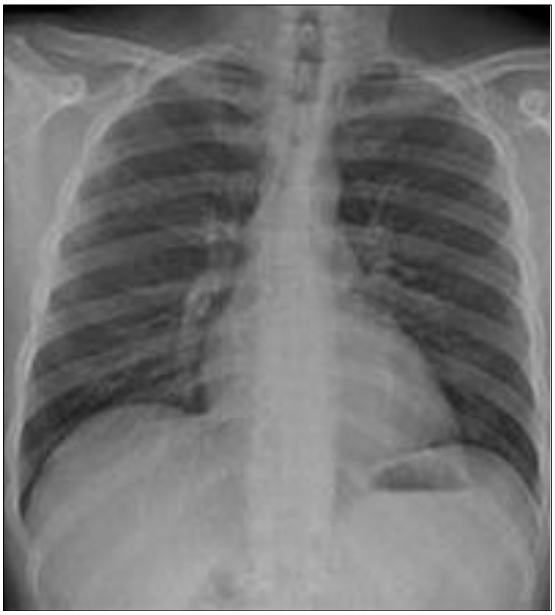

Image 2: After Treatment

Chest X ray PA view of a female child of 10 years. Before and after treatment clearly seen the improvement in chronic cough relieves within 2.5 months with ayurvedic regimen. Also the symptoms relieve and the child feels better.

Discussion

Ayurveda states that in children, the *Prana, Dosha, Dhatu, Bala, Ojas* are underdeveloped, and therefore, they are the most vulnerable group in terms of illness. Therefore they should be supported externally to potentiate their immune system. Although available allopathic conventional management provides symptomatic relief, there is no conclusive evidence that they shorten the duration of symptoms, hence for the above case we used proven ayurvedic preparation for chronic cough.

Pippalyadi rasayan

Pippali was one of the plants, which was growing in forest, has antitoxic drug, grouped under *katurasa varga*, and has *sleshmahara* property. The drug pippali finds its mention in atharvaveda in the context of rasayana and *vata roga bheshaja*. Acharya charaka in vimana *sthana* has elucidated yogavahi karma of pippali due to this special property it is used in various formulations as a medicine and adjuvant 9 pippali is indicated in *swasa, kasa, kshaya, pliha roga, gulma, jvara, udara roga, amavata, amadosha*10 major constituents of piper longum are piperine, piperlongumine and methyl 3,4,5-methoxycinnamate. Others include resin, volatile oil, starch, fatty oil, and inorganic matter, having anti-amoebic, anti-asthmatic, hepato- protective, and immune-modulatory activities [11] Hence effective in Jirna kasa.

Yashtimadhu Churna: Yashtimadhu has been popularly used in Indian households to provide relief from a sore throat. This herbal medicine can treat cough, throat irritation and other upper respiratory problems. The antibacterial properties of Yashtimadhu help fight bacterial infections of the respiratory tract. Yashtimadhu is a popular herbal supplement that can boost your innate immunity and help your body fight diseases. Yashtimadhu can soothe irritated and inflamed bronchial walls. It also reduces chest congestion and relieves cough. The potent anti-inflammatory and antibiotic properties of Yashtimadhu make it a popular remedy to help get rid of phlegm. In Ayurvedic classical texts Yashtimadhu properties are very well explained by *Maharshi Charak* [12].

Sitopaladi Churna: Depending on the nature of the cough, it may be mixed with honey, water, or ghee or given alongside other herbal formulations. Animal studies established its ability to block cough. The antitussive activity of this medication is assigned to its ability to effect the central nervous system and suppress a cough. This soft remedy is considered safe enough for children as well [13]. The immune System responds to an allergen such as dust, dander, pollen etc. by releasing a chemical known as histamine. this is responsible for sign or symptoms like running nose, watery eyes, or bitter throat you experience during an allergic reaction. Animal studies show that sitopaladi churna has antihistaminic activity and can help you tackle allergies. It inhibits the release of inflammatory mediators from mast cells in our body and stabilizes them. This, in turn, helps to control those classic allergy symptoms [14].

Vasavaleha: Vasavaleha is a potent Ayurvedic remedy for respiratory conditions like bronchitis, asthma, and persistent cough. Asthma, bronchitis, and cough are just a few of the respiratory disorders that can be effectively treated with vasa. Vasa has a chemical that is related to bromhexine chloride as well as volatile oils, which is why it functions so effectively as an expectorant. Vasa's roots, leaves, and flowers are its main uses. Vasa functions as an expectorant, loosening the clingy phlegm and facilitating its removal from the chest and airways. By lessening bronchial tree irritation and spasm, it prevents asthma attacks. By calming the throat, it also aids in the management of pharyngitis and chronic cough [15].
Vasavaleha shows antitussive activity. Vasicine present in vasavaleha extracts dilates the bronchioles or air passages in the lungs. The different phytoconstituents present in vasa also have cough suppressing properties and act on the brain, specifically the medulla [16].

Conclusion

Acharya *Charaka* specifies that *avarana* of *Kapha* to the *gati* (movement) of Prana *Vata* ultimately leading to *Kaphaja kasa*. In chronic bronchitis there is also production of mucus due to inflamed mucosa of the respiratory tract. Chronic production of mucus in the respiratory tract leads to airflow obstruction leading to symptoms like cough with expectoration, dyspnea, wheezing etc. Chronic cough is due to *Avarana* of *Kapha* to *Pranavayu*. Agni *Dushti* may also be a contributory factor in the *Samprapti*. In the involvement of *Dushya* Rasa dhatu plays a major role. Prana Vayu attains *Vilomagati* due to *Avarana Samprapti*. In this regard, treatment principles should include *Agnideepana*, *Avaranahara*, *Vatanulomaka* and *Rasayana*. The formulation of *vasavaleha is generally* indicated in all types of *Kasa* and *Shawsa*, and has *Anabhishyandi*, *Snigdha* and *Sroto Shodhan* properties.
From the above case study we can confirm that it is very important to have an Ayurvedic approach in recurrent respiratory illness like chronic cough, chronic rhinitis etc. *Kapha dushti* and *Dhatu kshaya* in recurrent respiratory illness is the prime thought which should be considered while treating the patient and proper ayurvedic interventions should be administered. Patient had significant relief recurrent episodes of respiratory illness by given ayurvedic regimen. Thus, Ayurvedic Regimen is beneficial in prevention and management of recurrent respiratory illness.

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