A Critical Review on the Etiopathogenesis and Treatment of Kaphaja Kasa (Chronic Bronchitis)

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Abstract

The excellency of Ayurveda over medical science is that it had not only mention Kasa as symptom in various diseases but also described it as an independent vyadhi with its separate pathogenesis symptoms, signs, types and treatments. Kasa is one of the pranavaha srothodusti janita vyadhi which affects the normal life style. Kaphaja Kasa is a type of Kasa dominated by Kapha and Vataadusti. Chronic bronchitis is a pathological condition characterized by the chronic cough and excessive mucous secretion in the tracheo bronchial tree. Cigarette smoking, environmental pollution, unaccustomed occupational surroundings are major causes of chronic bronchitis. Even though it is not life threatening, but on triggering causes may lead to acute exacerbation of symptoms and may need immediate intervention. Kaphaja Kasa can be best compared with chronic bronchitis. The mucolids, expectorants and cough suppressants are fail to relive the chronic bronchitis, so there is a major role of Ayurveda in treatment of Kaphaja Kasa. Here an attempt is made to review causes, pathogenesis and treatment of Kaphaja Kasa w.r.t. to chronic bronchitis.

Key words: Kaphaja Kasa, Chronic bronchitis, Expectorants.

Introduction

Kasa is one of the disease explained in many Ayurveda texts. Kasa may be a symptom (Lakshana) associative to other disease and an independent disease, sometimes may develop as Upadrava of a disease. Kasa is broadly classified as Ardrakasa and Shushkakasa (1). Understanding and differentiating the Kasa is most important to treat the condition effectively. Chronic bronchitis is characterized by chronic cough with expectoration for at least three months of the year for more than two consecutive years(2). Prevalence of it is directly related to the prevalence of tobacco smoking and, in low and middle income countries, the use of biomass fuels(3). Morphologic features of chronic bronchitis grossly, the bronchial wall is thickened, hyperaemic and edematous and microscopically histologic definition of chronic bronchitis by increased Reid index(4). Ayurveda explains different approaches to treat the Kaphaja Kasa as Nidanaparivarjana, Shamanoushadhi and Shodhana are different modes of treatments. In contemporary medical system mucolytics, expectorants and antibiotics are the choice of treatment in chronic bronchitis. As disease is chronic, patient has to use these medicines for long duration. Due to disease modification from time to time has created resistance to these medications, so Ayurveda have major responsibility to treat this condition.

Etiology of Kaphaja Kasa (Chronic Bronchitis)

Nidana of any disease can be classified as Samanya and Vishesh. Charakacharyya had not explained the Samanyanidana for Kasa. As Kasa is one of the Pranavaha Srotho Dustijanita Vyadi and have similarity in etiopathogenesis with Hikka and Shwasa, so Pranavahasrotho dusti Nidana and Hikka Shwasa Samanya Nidana can be considered as Kasa and Kaphaja kasa Samanya Nidana, like Dhun, Raja Vyayam, Rukshanna, Bhojan Vimargagaman, Kshvathu vegavrod(5). Intake of Guru, Abhisyandi, Madhura, Snigdha Ahara, Divaswapna and Achesta are explained as Kapajakasa Visheshha Nidana [6]. These will act as Dosha Hetu, Vyanjaka Hetu, even Uthpadhaka Hetu. These causes will set the Samprapthi of Kaphaja Kasa and sometimes these will also act as triggering factors leading to exacerbation of symptoms. Cigarette Smoking, air...
pollution. Occupational exposure to inorganic or organic dusts or noxious gases, recurrent respiratory infection in childhood, familial and genetic factors (alpha-1 antitrypsin deficiency), low birth weight. The long term indulge in these Nidana will cause the Kasa and these will also act as triggering factors.

**Samprapti of Kaphaja Kasa**

Samprapti of Kaphaja Kasa can be divided as Avasthika Samprapti and Vega Kalen Samprapti. The causes have tendency to vitiate both Vata and Kapha. Udana Vatadusti and Kaphadusti is initial stage of Samprapti. Function of Udana Vata will be obstructed by Kapha and these Dosha will take Stanasamshraya in Urah, Kantha and Shiras. At Vegakala Vyanjaka hetu like Raja, Dhuma, Shithambu will precipitate the Samprapti leading to Aardra kaphajakasa Vega, where Kasa is associated with Nishtivana.

**Etiopathogenesis of Chronic Bronchitis**

Chronic Bronchitis is defined clinically as persistent cough with expectoration most of the days for at least three months of the year for two or more consecutive years. Etiological factors causes thickened, edematous, hyperaemic bronchial wall which reduces lumina of the bronchi and bronchioles which contain mucous or muco purulent exudates. The main pathological changes that takes place in the trachea bronchial tree are increased Reid index. Reid index is the ratio between thickness of the submucosal mucus glands (i.e., the hypertrophy, hyperplasia) in the cartilage-containing large airway to that of total bronchial wall. The increase in thickness can be quantitatively assessed by micrometer lens or by morphometry. The bronchial epithelium may show squamous metaplasia and dysplasia. There is little chronic inflammatory cell infiltrate. The non-cartilage containing small airway show goblet cell hyperplasia and intra luminal and peribronchial fibrosis.

**Pathophysiology**

COPD (in chronic bronchitis) has both pulmonary and systemic components. The presence of airflow limitation, combined with premature airway closure, leads to gas trapping and hyperinflation, reducing pulmonary and chest wall compliance. Pulmonary hyperinflation also flattens the diaphragmatic muscles and leads to an increasingly horizontal alignment of intercostals muscles, placing the respiratory muscles at a mechanical disadvantage. The work of breathing is therefore markedly increased, first on exercise, when the time for expiration is further shortened, but then, as the disease advances, at rest.

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**Samprapti**

\[
\text{Nidan} \downarrow \\
\text{Awastik} \quad \text{Udan vayu & Kapha dusti} \\
\quad \text{Kaphavrut Udana} \\
\quad \text{Sthan Samshraya in Urah, Kantha, Shiras} \\
\text{Vega Kalena Samprapti} \downarrow \\
\quad \text{Vyanjaka hetu} \\
\quad \text{Aardra (Kaphaja Kasa)}
\]

Productive cough usually exacerbate after colds during winter season, which show steady increase in severity and duration with successive years until cough is present all the year round. There after development of exertional breathlessness with morning cough and wheeze which is due to increased bronchial obstruction by the inflammatory pathology and repeated respiratory tract infection in the tracheo bronchial tree. Breathlessness is aggravated due to various etiological factors such as infection, cigarette smoking and atmospheric condition.
Types of Chronic Bronchitis (11)
This classification is based on the severity of the illness or the extent of involvement of the pathological changes, thus it can be classified into,
a) Simple Chronic Bronchitis
b) Mucopurulent Bronchitis
c) Chronic obstructive Bronchitis

Clinical feature of Kaphaja Kasa
Kasavega (cough) is cardinal symptom of Kasaroga, which will be present in all types of Kasa. The differentiating symptoms of Kaphaja Kasa help to make more precise diagnosis. Clinical symptoms of Kasa can be again divided as Avasthika Lakshana and Vegakalen Lakshana. Even symptoms can be segregated as Sarvdiiaheka Lakshana and Urdvajathrogatha Lakshana.

Bahala Madhura Snigdha Ghana Nishtivana (12)
This is the Pratyatama Lakshana of the Kaphaja Kasa. Where relatively more quantity of sputum will be produced comparing to other types of Kasa. The character of sputum will be Ghana, Snigdha and Madura. These Lakshana are in accordance with Kaphadosha Guna like Guru, Manda, Snigda, Slakshna, Sandra etc.

Mandagni (13)
Dravyathya and Gunatha Kaphadusti in Aamashaya will lead to Mandagni.

Aruchi (14)
Vata, Pitta and Kapha separately or all together when lodges in Jihwa and Hridaya or due to non availability of Manoanukula Ahara inturn causes Aruchi.

Chardi (15)
Vitiated Kapha which will produce the excessive act of coughing which in turn produce increased abdominal pressure which will cause expulsion of the contents outside from the stomach.

Pinasa (16)
According to commentator Dalhana Pinasa is Prana Vayu Prakopa Janitha Vyadh. In Kaphaja Kasa due to the Pranavaha Srotos Dusti and vitiation of Prana Vayu, the patient may suffer from Pinasa.

Gaurava (17)
This is feeling of the heaviness which is due to the increase in the quality of the Kapha such as Guru, Snigdha, and Picchila Guna. This can be understood as heaviness of the body or the heaviness of the chest due to increased secretion in the Pranavaha Srotas.

Asyamadhurya / Mukhapralepa / Kantaupalepa (18),(19),(20)
Sweetness in the mouth is distinct indicative of Kaphadosha. Increase in the Picchilaguna Vriddhi in the Kapha Dosha will cause adherence in the oral cavity or the pharynx.

Kasamanoruk Vaksha (21)
Even though Kapha is predominant Dosha in Kaphaja Kasa, there will be involvement of Vata also. Sthanasamshraya of Vata in Urah, Kanta, Shira will lead to the symptoms like pain in chest region, headache and sore throat.

Shiroruja (22)
From Vegavarodha there will be a Prakupita Vayu which inturn gets Pratiloma Gati of Vayu gets Sanchita in Murdhavaha Siraas and causes Shiroruja.

Kanthakandu (23)
The Kleda and Sheetatwa produced by Karmatmaka Vriddhi of Kapha leads to these symptoms.

Swarabheda (24)
The Gala Talulepa by the aggravated Kapha and vitiation of Udana Vayu irresponsible for the Swarabhedha.
Chikitsa

In treatment of Kaphaja Kasa there is a need of different mode of approaches at different stages. Most of time multi treatment protocol has to be adopted.

At first, the patient of Kaphaja Kasa, if strong, should be evacuated with emesis (Vaman) and then managed with edibles made of barley, pungent, rough and substances and other kapha-decreasing items (25).

Patient may drink honey (mixed with water), sour drinks, warm water, butter milk, or harmless alcoholic drinks. (26)

Nidana Parivarjana

It is most important aspect of treatment. Person with Kaphaja Kasa has to avoid triggering factors like smoking, dust inhalation etc. some time person has to make some modification in his occupations to avoid these Nidana like mask wearing; avoiding Air Conditioned environment etc. patient should be more conscious during cold/winter seasons and during travel to cold atmosphere.

Samshamana

There are many single drugs, Kastoushadhi and Rashoshadis are indicated for Kaphaja Kasa. These have Katu, Ushna, Tikshna, Sukshma, Chedana, Kaphanissaraka, Kasagna Guna. Trikatu, Pippali, Kantakari Avaleha, Agastyavarutika, Kapha Ketu Rasa, Agastyaavaleha, Vyghri Haritaki Avaleha are beneficial in Kaphaja Kasa. Pippali and Agasthya Harithaki Yoga can be used as Rasayana in Kaphaja Kasa.

Shodhana

The first line of Shodhana in Kaphaja Kasa is Vamana. Vamana will expel the Dushita Kapha and relive the Aavarana to Vata giving more and effective result in Kaphaja Kasa. The Virechana can be planned in Vata, Pittanubandha. Here Vata should be controlled to relive Vedana in Urash and Parshwa. Nasya Karma is helpful because the Sthnasamsraya is in Urdhvajatrugata. Virechana and Nasya have minimal role in Vegakalen and Bahudoshaja Kaphaja Kasa. In Avasthika Kala these can be adopted as per the Yukthi of physician. If Bahudosha and Amashyagatha Kaphaja Lakshana are noticed Sadhyovamana can be adopted rather than classical Vamana. Kavalaghr, Dhunapana are also helpful in condition of Kaphajakasa. After the Vamana, Tikshana Dhunapana will helpful in Kaphajakasa.

Conclusion

Kaphaja Kasa is one of Pranvaha Srothodusti Janita Vyadhi where Kasavega is associated with Bahala Ghana Nishtivana. Kaphaja Kasa can be studied parallelly with contemporary understanding of chronic bronchitis. The causes and symptomatology of both Kaphaja Kasa and chronic bronchitis mimics each other so these can be best correlated, Nidana Parivarjana, different Shamnoushdhi and different modes of Shodana will help in treating the Kaphajakasa.

Probable these Shamana drugs act as cough suppressant, expectorants and mucolytic. In future scope there is a need to prove the action of these Shamana drugs clinically and pharmacologically.

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