

## VATAJ KASA W.S.R. TO TOPICAL PULMONARY EOSINOPHILIA (T.P.E) - A REVIEW

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### ABSTRACT

Vataj kasa correlate with Topical pulmonary eosinophilia (TPE). TPE is caused by an immune hyper responsiveness to microfilariae trapped in the lungs. TPE is a syndrome of wheezing, fever and eosinophilia seen predominantly in the Indian subcontinent and other topical area. This problem has been compounded by our modern life style, for industrialization and population explosion. Symptoms of vataj kasa like shuska kasa, prasakta vega, uraha shoola, ksheena bala, ksheen oja, etc. According to Ayurveda dhuma and Raja are the main cause of pranavahasrotodusthi.

**KEYWORDS:** TPE, DCE, Cough, Vatajkasa, Vataghana Siddha Sneha, Pranavahasrots.

### INTRODUCTION

The human body is continuously under the influence of environmental changes; quality of life on whole earth is deteriorating day by day due to pollution and urbanization. The quality of air, water and food ingested does not have always a beneficial effect and its purity determines the health of a person, All these variables have a toxins effect on the basic immune system of the human body and fundamental health of the body. The fact is that the fundamental unit of biological activity has been mentioned in Ayurveda. One of the unique criteria of living activity is breathing. One of the basic activities of pranavahasrotas is exchange of air, the rate of exchange of air is to tune of 16 times per minute making it one of the most vulnerable site for disease. This problem has been compounded by our modern life

style, for industrialization and population explosion. According to Ayurveda dhuma and Raja are the main cause of pranavahasrotodusthi.<sup>[1]</sup>

Vataj kasa correlate with Topical pulmonary eosinophilia (TPE) is clinical manifestation of lymphatic filariasis, a parasitic infection of caused by filarial nematodes that inhabit the lymphatic and blood stream. TPE is caused by an immune hyper responsiveness to microfilariae trapped in the lungs. TPE is a syndrome of wheezing, fever and eosinophilia seen predominantly in the Indian subcontinent and other topical area.<sup>[2]</sup>

### EPIDEMIOLOGY

Tropical pulmonary eosinophilia (TPE) can occur in any tropical area. It is more common in individuals from the Indian subcontinent and occurs four to seven times more frequently in males than in females. Rare cases have been described in children. The majority of cases of TPE occur in endemic areas.<sup>[3]</sup>

If T.P.E. is neglected or miss-managed, it may results in disease with poor prognostic condition. In Ayurveda Kasa is taken as an independent disease unlike in modern science, also it may occur as a symptoms or an upadrava in other diseases. Vataj kasa is a correlate with topical pulmonary eosinophilia on the basis of sign and symptoms.

### DERIVATION OF VATAJA KASA<sup>[4]</sup>

**Vataja-** the word vata can be defined as gati gandhanayoh that which gives movement, knowledge and enlightenment to the shareera. Vataja means that which is produced by vata, which is one of the somatic humour of the body.

**kasa-** charakacharya defined kasa as release of obstructed vayu resulting in the production of abnormal sound in the process, which may be productive or dry.

Sushruta defined Kasa as, the disease associated with a typical sound that can be compared to that sound obtained from broken bronze vessel.

### DERIVATION OF T.P.E.

The word tropical pulmonary eosinophilia consists of three components. First component tropical means region lying between the latitude 23<sup>0</sup>, 27<sup>0</sup>, north and south eqator.<sup>[5]</sup> On the other hand to the aperture leading from the ventricle to the pulmonary artery. In the third component Eosinophilia. Eosin- rose coloured stains or dye, the sodium salt of tetra bromo

flomicin, very much used in histology, lab procedures, eosinophil are the agranular leukocyte having a nucleus with two lobes connected by a thread of chromatin or cytoplasm containing coarse, round granules of uniform size eosinophilic leukocytosis.

T.P.E. a subacute or chronic form of occult filariasis<sup>[6]</sup>, usually involving *Brugia malayi* or *Wuchereria bancrofti*<sup>[7]</sup> occurring in the tropics. It is characterized by episodic nocturnal wheezing and coughing, strikingly elevated eosinophilia, and diffuse reticulonodular infiltrations of the lung. Sometimes the lymph nodes and spleen are greatly enlarged.<sup>[8]</sup>

### DEFINITION OF COUGH<sup>[9]</sup>

A cough is a forceful release of air from the lungs that can be heard. Coughing protects the respiratory system by clearing it of irritants and secretions.

### PARYAY<sup>[10]</sup>

Paryaya of kasa are mentioned in Atharva Veda, they are,

1. Kasaha
2. Kasa
3. Kasika

Roga vishesha, which produces a peculiar sound i.e, kas shabda.

According to Amara Kosha and Hemachandra Kasa and Kshavatu are synonyms.

### NIDANA (ETIOLOGY) OF VATAJ KASA<sup>[11]</sup>

Vataj Kasa one of the pranavaha srotodusti vikara. Breathing is the most important action of pranavaha srotas, without which one cannot survive, we exchange the respiratory air with the exothermal atmosphere almost 16 times per minute. Thus makes it pranavaha srotas to be one of the exposed srotasa of our body and hence vulnerable to dusti. As we all known, now a days air pollution has increased beyond limits due to heavy traffics and urbanization but all the time not everyone will get the disease. The immunity factor (vyadhi partirodha kshmata) and the deha prakrithi are responsible for the disease manifestation. If the person is weak, due to vyadhi prssatirodhak kshmata he is prone to the disease often and often.

Nidana is categorized broadly into two main divisions in Ayurvedic Medical Science.

1. General causative factor (samanya nidana)
2. Specific causative factor (vishesha nidana)

General etiological factors are responsible for the manifestation of all varieties of kasa, where as the specific to each variety of kasa. Rest of the authors viz, Sushruta. Vagbhata, Bhavamishra, Madavakara, Yogaratnakara have explained general nidanas for all the varieties of kasa.

**Mainly, nidana of kasa can be classified into**

1. **Abhyantara nidana-** Tridosha & ama can be considered & other pathological conditions like adhijihwa & galasundika can be considered.
2. **Bahya nidana-** all the other nidanas explained in nidana can be considered. For the better understanding of nidanas are four types-
  - A. Aharaj nidana
  - B. Viharaj nidana
  - C. Manasika nidana
  - D. Sannicrista Nidana

**A. Aharaj nidana**

- Rooksha ahara sevana
- Atisheetha rasa ahara sevana
- Atisheetha ahara sevana

**B. Viharaj nidana**

- Dhooma sevena
- Raja sevana
- Sharma
- Vegavarodha
- Anila Sannirodha
- Vega udeerana
- Ati vyavaya
- Ayasa

**C. Manasika nidana**

- Hasya prahasya

**Causes of Tropical pulmonary eosinophilia<sup>[12]</sup>**

1. **Extrinsic syndromes**

## 2. Intrinsic syndromes

**All the below mentioned are extrinsic causes**

**Medication:** induced syndrome: these respond to the offending agents, with few, if any, residual effects.

**Loeffler syndrome:** Remove any potentially offending medications or ingested substances. Loeffler syndrome is mild and self-limited. Patients rarely require systemic corticosteroids.

- **Parasitic infection:** *Brugia malayi*, *Wuchereria bancrofti*.
- **Fungal causes example:** *Aspergillus fumigatus*, allergic bronchopulmonary aspergillosis (ABPA).
- **Drugs (example:** sulphasalazine,)

**The intrinsic syndromes are**

- a. Idiopathic hypereosinophilic syndrome (IHES)
- b. Chronic eosinophilic pneumonia (CEP)
- c. Eosinophilic granuloma (EG)
- d. Churg-Strauss syndrome (CSS)

### **POORVARUPA OF VATAJKASA<sup>[13]</sup>**

- Shooka Purna gala
- Shooka Purna gala
- Kanta kandu
- Bhojmanvarodha
- Galatalu lepa
- Swashabha vaishamya
- Arochaka
- Agnisada

### **SAMANYA ROOPA OF VATAJ KASA<sup>[14]</sup>**

1. Kasa
2. Deha kshipana
3. Parshwa Shoola

4. Urah Shoola
5. Pristshoola

#### **VISHESHA ROOPA OF VATAJ KASA<sup>[15]</sup>**

1. Shuska kasa
2. Prasakta Vega
3. Ksheena Bala
4. Ksheena Oja
6. Urah Shoola
7. Pristshoola
8. Kshama anana
9. Jeerna kala and ratribali

#### **CLINICLE FEATURES<sup>[16]</sup>**

TPE occur mostly in young males with a male-female ratio of 4:1 and in age group 15-40 years. TPE predominantly affects the lungs.

- Systemic symptoms include like fever, loss of body 00000weight, malaise and fatigue other than pulmonary manifestations include lymphadenopathy and hepatospleno megaly. Breath sound- wheeze and crackels present while chest examination.
- Laboratory findings are high 30000/ $\mu\text{m}$  to rise level 80,000/ $\mu\text{m}$ .
- ESR is elevated in 90% of cases.
- High serum levels of IgE

#### **SYMPTOMS OF TPE<sup>[17]</sup>**

- Chest pain
- Low Fever
- Weight loss
- Leucocytosis
- Weakness
- Recurrent cough that gets aggravatated
- Weakness
- Symptoms mostly occur in night but may also occur in day time, type of sputum production is in scanty may be viscous and mucoid. Rare pulmonary presentation include consolidation cavitation, pneumothorax and bronchiectactasis.

- **SAMPRAPTI<sup>[18]</sup>**
- Samprapti is an essential tool of diagnosis of the disease and very useful in planning the successful treatment. In the Ayurvedic classic there is no specific samprapti mentioned of vataj kasa but the description regarding the general samprapti of the disease Kasa has been explained in Ayurvedic classics.

The samanya samprapti of kasa roga when vata, getting obstructed in the lower channels, becomes lodged in the upper channels and talking on the function of the udana vayu that is expiratory function, gets localised in the thorax and the chest. Then entering all the cavities in the head, fills them up and causes hunching and conclusive movements of the body, jaws, sides of the neck and eye. It distorts and stiffens the eye, back, chest and sides of the body and then leads to cough which is either dry or accompanied with expectoration of phlegm. Cough is so called because the word cough (kasa) is derived from the root 'kas' to move. It causes the movement of phlegm from the respiratory passages.

### **Pathogenesis<sup>[19]</sup>**

Tropical pulmonary eosinophilia is an occult form of human filariasis. The gamma-glutamyl transpeptidase found in the infective L3 stage larvae of *Brugia malayi* has been found to have similarities with the gamma-glutamyl transpeptidase present on the surface of human pulmonary epithelium. It has, therefore, been proposed that filarial gamma-glutamyl transpeptidase may play an important role in the pathogenesis of tropical eosinophilia. Airway hyperresponsiveness, manifesting as asthma-like syndrome, has been reported in tropical eosinophilia and it has been reported in tropical pulmonary eosinophilia and it has been suggested that interleukin -4 induced and interferon - $\gamma$  suppresses filarial -induced airway hyperresponsiveness.

### **DIAGNOSIS**

#### **LABORATORY INVESTIGATIONS<sup>[20]</sup>**

- Peripheral eosinophilia count greater than  $3 \times 10^9/L$
- An elevated serum IgM levels ( $>1000 \text{ KU/L}$ )
- Increased titers of antifilarial antibodies
- Radiological investigation
- Chest X-ray
- Computed Tomography

**SAPEAKSH NIDAN<sup>[21]</sup>**

<b>Vyadni name</b>	<b>Specific type of Kasa</b>	<b>Sarvdiahak laxan</b>	<b>Nistivan</b>	<b>According to Morden Science</b>
Vataj Kasa	Prasakta	Shoola	Shuska	T.P.E

**DIFFERENTIAL DIAGNOSIS<sup>[22]</sup>**

- Asthama
- Ascariasis
- Aspergillosis
- Eosinophilic Granulomatosis with polyangitis
- Restrictive lung disease
- Tuberculosis
- Pulmonary Arterial hypertension
- Eosinophilic pneumonia

**AYUVEDIC LINE OF TREATMENT(CHIKITSA)<sup>[23]</sup>**

The vataj kasa in rough persons should be treated priority with unctuous applications, ghee, enema, gruel, vegetable soup, milk. Then administration of vatasiddha sneha (internally), medicated smoking and lehya. Then constipation and flatulence should be overcome by unctuous enema. dryness of upper parts by ghee intake before meals, and associated pitta and kapha by unctuous purgation.

- **The following are the principal of chikitsa in vataj kasa.**

1. snehana
2. vatagna siddha sneha prayoga
3. ghrita prayoga
4. sneha dhoom
5. Abhyanga
6. parisheka
7. Basti

- **Ekal dravya proyaga (single drugs):** Tulsi, haridara, neem, vasa, kantkari<sup>[24]</sup>
- **Asav aristam:** Vasasav,<sup>[25]</sup>
- **Churna** vidangadi churna,<sup>[26]</sup>
- **Grutham** kantkari ghritam,<sup>[27]</sup> pipalayadi ghritam,<sup>[28]</sup> rasana ghritam,<sup>[29]</sup>



- **Avaleham:** Vygriharetaki rasayana,<sup>[30]</sup> Agastya rasyana<sup>[31]</sup>
- **Dhoom(snigdha):** manashiladi dhoom, prpondrikagh dhoomvarti, manashiladimdhoomverti.<sup>[32]</sup>
- **Rasayana thearphy**

#### TREATMENT

The standered treatment recommended by the WHO for treatm ent of TPE is oral Diethylcarbamazine (6mg/kg/day in three divided doses)<sup>[33]</sup> for 3weeks. The aim is to treat the entire population at high risk for lymphatic filariasis through yearly,single-does treatment with a combonation of two drugs (DEC and albendazole)<sup>[34]</sup> and to continue to cover the Reproductive lifespan of adult stage parasites for 4-6 years. The combination regimen can be given in a dosage of 6mg/kg DEC and 400 mg albendazole.<sup>[35]</sup>

#### SADHYA ASADHYATA<sup>[36]</sup>

Before starting treatment is very essential that a physician should carefully examine the disease and ascertain to which category the disease can be included. That is to say, whether it can be included under sukhsadhay or krichra sadhya or yapyia or asadhya group.

According to Charaka & Vagbhata, the kasa that is manifested by single dosha is a sadhya, so vatajkasa is a sadhya vadhi. In case of aged person, it will be yapyia. In our classics it is mentioned that if the disease process nidana, poorva rupa are in minimal quantity, if the patients prakruti, the season and the desha are not equal to the vata dosha, if it is navotpanna without complications, if the patient is capable of taking medicine and Chikitsa chatushpada are in good condition it will be sadhy vyadhi.

However the variance in the causative agent, severity of doshic involvement bodily resistance for the disease contributes the variation in the severity of manifestation and there by responsible for good or poor prognosis.

#### PATHYA and APATHYA

Treatment procedure for any disease without the diet will not be complete. The diet and drugs, which are favourable to the body, mind, and do not produce any adverse effects, are considered as pathya and opposite to it are apathy. It plays very important role in treating the disease it adds to the Chikitsa processes. Generally, following pathya & avoiding apthya in its primary stage can treat disease. Acharya charaka has considered the word pathya as a

symptoms of Chikitsa. pathya like mamsa peya<sup>[37]</sup> is beneficial. aphyatya like ati madu ahar should contra indicated.

Since most all, the disease are due to mithyaahara and vihara sevana, pathya & apathy plays a prime role. The pathya mentioned in our classics are below. Nidanas that are compiled under the heading vataja kasa nidana can be considered as apathy.

## CONCUSION

Vataj kasa correlate with T.P.E. is diseases of swasanavaha samstana are one of the commonest problems in tropical countries like INDIA. India a being tropical country the prevalence of T.P.E. is remarkable. vatajkasa presents with symptoms like shuska kasa, prasak vega, uraha shoola, ksheena bala, ksheena oja etc. While explaining kasa the chikitsa of vataj kasa sehana chikitsa, abhayantra sneha pana specialy shaman sneha indicated. As per the morden line of treatment Diethylcarbazine and single-does treatment with a combonation of two drugs (DEC and albendazole) are indicated.

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