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Management of Eosinophilia With Elevated Serum IgE (*Karappan Pitham*) Patient Through Traditional Siddha Herbal Drug *Swasakasa Nei* – A Case Report

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Abstract: Eosinophilia is one of the common laboratory findings of who have history of dust and food allergy with lingering symptoms such as itching, sneezing with rhinitis, cough, dyspnoea, chest discomfort, wheezing and hyperpigmentation in some cases. This can be correlated with *Karappan pitham* by Siddha point of view. Conventional treatment may control the eosinophilia and provide symptomatic relief at the time, but relapses are often observed. A 24-year-old male patient has been diagnosed as eosinophilia with elevated serum IgE based on his presenting complaints. He was given *Swasakasa nei* (Internal) and *Kungiliya vennai* (External) as an intervention. After completion of ten weeks of the treatment, the patient got complete symptomatic relief and no symptoms was relapsed during the follow-up period of four weeks and patient's increased absolute eosinophil count 860 cells/cumm and serum IgE 5284.5 IU/ml turned down to 210 cells/cumm, and 3273.8 IU/ml, respectively. The observations infer that the *Swasakasa nei* has significant benefits in eosinophilia with elevated serum IgE patient. This shows that there is a wide scope to explore the variety of imperative medicines present in Siddha pharmacopoeia, which can be used more rationally to treat various allergic conditions like allergic asthma, hay fever, allergic eczema etc.

Keywords: *Karappan pitham*, Eosinophilia, serum IgE, *Swasakasa Nei*, *Kungiliya vennai*, Siddha system

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Introduction

Eosinophils are one of the blood granulocytes expressing cytoplasmic granules containing basic proteins and binding with acidic dyes like eosin.

They are derived from bone marrow, and their production is stimulated by Interleukin-5 and 3, also by GM-CSF. The circulating half-life of

eosinophils is from 4.5 to 8 hours. They can reside in tissues, particularly in the respiratory and gastrointestinal tract, for 8 to 12 days (Kanuru and Sapra, 2022). Eosinophilia is defined as greater than 500 eosinophils/mm³. The degree of eosinophilia can be categorized as mild, moderate, and severe such as 500–1500 cells/mm³, 1500 to 5000 cells/mm³ and >5000 cells/mm³, respectively. Moderate to severe eosinophilia (≥ 1500 cells/mm³) is referred to as hypereosinophilia (Kuang, 2020).

Eosinophilia can be caused by various factors, Primary causes are Chronic eosinophilic leukemia, Myeloid and lymphoid neoplasms with rearrangements of PDGFRA, PDGFRAB or FGFR1 genes, Hereditary eosinophilia, Idiopathic hypereosinophilic syndrome and Secondary causes are—(i) Parasitic infestations such as ancylostomiasis, ascariasis, cysticercosis, echinococcosis (hydatid cyst), schistosomiasis, strongyloidiasis, trichinellosis, visceral larva migrans (toxocariasis); (ii) Fungal and bacterial infections such as bronchopulmonary aspergillosis, chronic tuberculosis (occasionally), coccidioidomycosis, disseminated histoplasmosis, scarlet fever; (iii) Allergic disorders like bronchial asthma, hay fever, Stevens-Johnson syndrome, drug, and food allergic reactions, DRESS syndrome; (iv) Skin diseases like Atopic dermatitis, eczema, pemphigus, *Mycosis fungoides*, Sezary syndrome, Graft versus host reaction, Connective tissue diseases like Churg-Strauss syndrome, eosinophilic myalgia syndrome; and (v) Miscellaneous are reactive pulmonary eosinophilia, tropical eosinophilia, pancreatitis, eosinophilic gastroenteritis (Kanuru and Sapra, 2022).

Eosinophilia's incidence and prevalence are not completely understood. There is no sex preponderance for eosinophilia. However, there might be geographical influences depending on the causes. In tropical countries, Parasitic infestations are more common. Allergic disorders are common in developed countries (Naymagon *et al.*, 2019).

Karappan pitham is one of the 42 types of Pitha disease, it is influenced by pitha humour. Eosinophilia can be correlated with *Karappan pitham* mentioned in the Siddha classical texts *Yugi vaithiya chinthamani* and *siddha maruthuvam (podhu)* (Kuppusami, 2016). The clinical features are nearly similar to Eosinophilia. The symptoms are sori (Itching), *Erumal* and *Eraippu* (Cough, Breathing difficulty with wheezh), *Maarbu vali* (Chest discomfort), *Vaanthi* and *Kazhichal* (diarrhoea and vomiting), etc. *Swasakasa Nei* (Kannusamipillai, 2007) is a traditional siddha herbal-based medicine. The root of *Argemone mexicana* Linn (*Brahmathandu*) and the leaf of *Calotropis procera* Linn (*Vellerukku*) are the main ingredients of this medicine. This case study throws light upon the use of *Swasakasa Nei* as a single drug in the management of Eosinophilia diagnosed as *Karappan pitham*.

Patient information:

A 24 years old unmarried, male patient working in a private software company, a non-smoker was consulted in the outpatient department (OPD) of Ayothidoss Pandithar Hospital (Dept of Maruthuvam), National Institute of Siddha, Chennai on March 3, 2022. With main complaints of itching and hyperpigmentation present in the cubital fossa of both hands, forearm region, and around the neck with increased sweating, breathing difficulty in late at night and early morning with chest tightness, rhinitis, and nasal congestion, disturbed sleep since last 1 year.

The patient had a history of food allergy to brinjal, prawn, dry fish, and dust allergy. He had no relevant family history of the disease. The patient was non-vegetarian and had a good appetite and sleep. Bowel habit was irregular with occasional constipation. Patient had history of using the allopathic drug (levocetirizine -10 mg) for managing the itching since last 1 year.

Clinical findings:

On general examination, the patient had a pulse rate of 80/min, respiratory rate of 20/min, and blood pressure of 130/80 mm of Hg. On General

examination pallor, icterus, clubbing, cyanosis, oedema, and lymphadenopathy were absent. Hyperpigmentation was noted in the cubital fossa of both hands, forearm region, and around the neck. On systemic examination, a mild wheeze was present in the auscultation of the respiratory system. No abnormalities were found in the cardiovascular, abdomen, and central nervous system.

Special examinations as per Siddha system of medicine:

Envagai thervugal (Eight-fold examination):

- ❖ *Naadi* (Pulse)- *Pitha vaatham*
- ❖ *Sparisam* (Tactile examination)- *Mitha vetpam* (Mild warm)
- ❖ *Naa* (tongue)- *Eyalpu* (Normal)
- ❖ *Niram* (Colour and complexion of body)- *Pitha niram*
- ❖ *Mozhi* (Speech)- *Eyalpu* (Normal)
- ❖ *Vizhi* (Eye and eyesight)- *Eyalpu* (Normal)
- ❖ *Malam* (Stool)- *Erugal* (Constipated)
- ❖ *Moothiram* (Urine)- *Eyalpu* (Normal)

Diagnostic assessments:

Diagnosis of Eosinophilia was done on the basis of clinical presentation and blood investigations. The symptoms present in the patient were assessed as subjective parameters. The absolute eosinophilic count (AEC) and Serum IgE level were compared before and after treatment as an objective parameter.

Line of treatments:

- ❖ 1st day - Purgation therapy
- ❖ 2nd day - Medicational rest
- ❖ 3rd day – Trial drug administration (Internal and External medicines)

The patient went through purgation therapy as per the first line of treatment, administered with *Agathiyar kuzhambu* – 200 mg in the early morning with *Sangankuppi* leaf juice. The patient

was purged 4 to 5 times after purgation therapy. The great Siddhar Therayar, had said “*vathamalaadhu meni kedaadhu*” in his *Pinigalin mutharkaanam* (Shanmugavelu, 2014), which reveals purgation therapy is the first line of treatment for allergic skin diseases. Following, the patient was administered with herbal drug *Swasakasa nei* of 3 ml along with *Karkandu Chooranam* twice a day after meals. The duration of treatment was 48 days (7 days drug holiday was maintained after every 14 days of drug administration) with follow-up after every 15 days. Also, *Kungiliya vennai* was used for external application over affected areas.

Timeline and therapeutic intervention:

Timeline and therapeutic interventions with the status of complaints in the course of treatment are given in Table 1.

Follow-up and outcome:

After ten weeks of treatment, moderate to complete improvement was observed in all the subjective parameters. The eosinophil count was within normal limits. No symptom was observed to be relapsed even during the follow-up period. Improvement in subjective parameters is illustrated in Table 2. The absolute eosinophil count was reduced to 210 cells/cumm from 860 cells/cumm and serum IgE level was reduced to 3273.8 IU/ml from 5284.5 IU/ml (Table 3).

No description of eosinophilia and related manifestations is available in Siddha texts. The current manifestation is correlated with *Karappan pitham* considering the symptomatology.

Regarding this case, exposure to dust, smoke, and wind is considered as extrinsic factors responsible for the infection. Due to his shift duty, he was stressful and reported feeling fatigue at the end of the day. He had a history of food allergy to brinjal, prawn, dry fish. Thus, the main cause of the disease is found in this case was allergy.

Swasakasa nei is a traditional siddha ghee-based medicine specially indicated for bronchial

Table 1: Timeline and therapeutic interventions with the status of complaints in the course of treatment

Date	Status of complaints in course of the treatment	Therapeutic intervention
06-03-2022	1. Itching and hyperpigmentation present in cubital fossa of both hand, forearm region and around the neck with increased sweating. 2. Breathing difficulty in late night and early morning with chest tightness. 3. Rhinitis and nasal congestion 4. Disturbed sleep	Nil
12-03-2022	Symptoms persist	Purgation therapy (<i>Agathiyar kuzhambu</i> - 200 mg in the early morning with <i>Sangankuppi</i> leaf juice)
13-03-2022	Symptoms persist	Medicational rest
From 14-03-2022 to 27-03-2022 (14 days)	Symptoms persist	1. Internal medicine - <i>Swasakasa nei</i> of 3ml along with <i>Karkandu Chooranam</i> for twice in daily after meals 2. External medicine - <i>Kungiliya vennai</i> was used for external application over affected areas.
From 28-03-2022 to 03-04-2022 (7 days)	The itching gets reduced mildly. Other symptoms are persisted.	Drug holiday was followed
From 04-04-2022 to 17-04-2022 (14 days)	The itching gets reduced mildly. Other symptoms are persisted.	Same medicines continued
From 18-04-2022 to 24-04-2022 (7 days)	The itching gets reduced moderately. Rhinitis and nasal congestion get reduced. Breathing difficulty was slightly reduced. Chest congestion and disturbed sleep persist.	Drug holiday was followed
From 25-04-2022 to 08-05-2022 (14 days)	Itching gets reduced moderately. Hyperpigmentation slightly reduced. Breathing difficulty slightly reduced. Chest congestion and disturbed sleep persist.	Same medicines continued
From 09-05-2022 to 15-05-2022 (7 days)	Itching and Hyperpigmentation get reduced moderately. Breathing difficulty moderately reduced. Chest congestion and disturbed sleep get reduced slightly.	Drug holiday was followed
From 16-05-2022 to 21-05-2022 (6 days)	Itching and Hyperpigmentation get reduced moderately. Breathing difficulty was moderately reduced. Chest congestion and disturbed sleep get reduced slightly.	Same medicines continued
22-05-2022	Itching and Hyperpigmentation get reduced. Breathing difficulty, Chest congestion, and disturbed sleep get reduced moderately.	Nil

Table 2: Improvement in subjective parameters

Subjective parameters	Baseline	After 2 weeks	After 4 weeks	After 6 Weeks	After 8 weeks	After 10 Weeks	Follow up after 14 weeks
Itching	+++	+++	++	+	+	-	-
Hyperpigmentation	+++	+++	+++	+++	++	+	-
Breathing difficulty	++	++	++	+	+	-	-
Rhinitis and Nasal congestion	++	++	++	-	-	-	-
Sleep Disturbances	++	++	++	++	++	+	-

Table 3: Laboratory investigation findings in before and after treatment

Laboratory parameters	Before treatment (12-03-2022)	During treatment (19-04-2022)	After treatment (25-05-2022)
Haemoglobin (g/dl)	15.9	15.7	15.7
Total WBC count (Cells/cumm)	9990	10160	11200
Neutrophils (%)	60.5	54.0	59.8
Lymphocytes (%)	30.1	39.1	34.2
Eosinophils (%)	3.0	2.4	1.9
Monocytes (%)	5.8	4.1	3.8
Basophils (%)	0.6	0.4	0.3
RBC count (Millions/cumm)	5.50	5.41	5.43
Platelet's count (Lakhs/cumm)	2.99	2.50	2.82
Haematocrit (PCV) (%)	46.5	46.1	46.0
MCV (fl)	84.6	85.4	84.7
MCH (pg)	28.9	29	28.9
MCHC (%)	34.2	34.0	34.1
Absolute eosinophilic count (AEC) (cells/cumm)	860	240	210
Serum IgE level (IU/ml)	5284.5	3910.9	3273.8

asthma and allergic diseases. The root of *Argemone mexicana* Linn (*Brahmathandu*) and the leaf of *Calotropis procera* Linn (*Vellerukku*) are the main ingredients of this medicine (Kannusamipillai, 2007).

Argemone mexicana Linn (*Brahmathandu*) having Bitter taste (*Kaippu*), Hot potency (*Vetpam*), Pungent on division (*Karppu*)

(Thiyagarajan, 2013) and also hold the Anti-stress and Anti-allergic, Anti-Asthmatic, Analgesic, Locomotor, Muscle relaxant, Anxiolytic and Sedative, Antioxidant, Anxiolytic properties (Bhalke and Gosavi, 2009; Perumal *et al.*, 2010; Anarthe and Chaudhari, 2011; Arcos-Martinez *et al.*, 2016; Singh *et al.*, 2021).

Calotropis procera Linn (*Vellerukku*) having

Bitter (*Kaippu*), Pungent (*Karppu*), Sweet (*Madhuram*) tastes, Hot potency (*Vetpam*), Pungent on division (*Karppu*) (Thiyagarajan, 2013) and also hold the Anti-histaminic, Bronchodilator, Anti-Asthmatic, Antimicrobial (Antifungal/ Antibacterial/ Antiviral), Anti - Inflammatory, Immunological effects, Anti-oxidant properties (Kumar *et al.*, 2005; Yesmin *et al.*, 2008; Kumar and Roy, 2009; Bagherwal, 2011; Mako *et al.*, 2012; Halu and Vidyasagar, 2012; Bouratoua *et al.*, 2013; Aliyu *et al.*, 2017; Beniwal and Mittal, 2022). By virtue of these properties, *Swasakasa nei* is useful in *Karappan pitham*.

Kungiliya vennai is an herbal formulation containing *Shorea robusta* (Sal-resin, Dipterocarpaceae), oil of *Sesamum indicum* and *Cocos nucifera* which have the potential to treat the wounds, burns, cuts and other skin diseases while applying topically (Bhat *et al.*, 2015). In this case *Kungiliya vennai* was applied topically on the affected areas to reduce the hyperpigmentation. It has given the additional prognosis of this condition.

Patient was using the allopathic drug (levocetirizine -10 mg) at the time of the first consultation and he had withdrawn the allopathy drug during the treatment period. The patient never felt its need during the treatment period and follow-up period. Considering these actions, it can be assumed that *Swasakasa nei* (Internal) and *Kungiliya vennai* (External) are useful in the management of eosinophilia with elevated serum IgE patient effectively.

Conclusion

Eosinophilia can be correlated with *Karappan pitham* as per siddha literature and *Swasakasa Nei* provided can manage the condition satisfactorily. The findings of this case report can be useful for understanding the possible clinical pathology of eosinophilia with elevated serum IgE and the benefit of Traditional Siddha intervention in the management of similar cases. Long-term studies using such Siddha intervention should be carried out in large samples to assess if any recurrence in

disease. An integrated approach should be adopted in prevention, management and to avoid recurrence of complications and thus improve the quality of life of the patients.

The patient felt complete relief from the symptoms with an improved quality of life and he was able to perform his daily activities without any limitations. Before starting the Siddha treatment, he was taking allopathic medicines, but as Siddha treatment started, he had left the allopathic medicines. Furthermore, after stopping the Siddha treatment, the patient didn't require any medicine and still, he is completely fine and his symptoms did not relapse.

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